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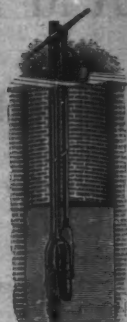
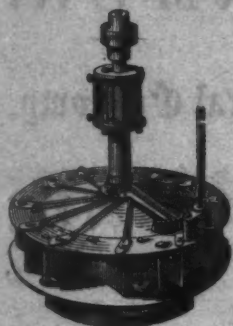
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THE
AMERICAN FARMER:
DEVOTED TO
Agriculture, Horticulture, and Rural Economy.

[ESTABLISHED 1819.]

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS."
Virg.

Sixth Series.

BALTIMORE, MAY, 1869.

Vol. III.—No. 11.

MAY.

'The meanest herb we trample in the field,
Or in the garden nurture, when its leaf
In Autumn dies, forebodes another Spring,
And from short slumber wakes to life again.
Man wakes no more!'

Said the desponding lay, 'Man wakes no more' ?
O Blind! who read'st not in the teeming soil,
The freshening meadow, and the bursting wood,
A nobler lesson!

REMINISCENCE.

NOTES FROM THE FIRST VOLUME OF THE
AMERICAN FARMER, PRINTED IN 1819.

We continue these notes, because of their intrinsic value, not only because the matters noted belong to a period long past. While many of them have a special interest of their own, they, on the whole, illustrate to our mind the little real progress which has been made in agricultural knowledge within fifty years, and the slowness with which new ideas are diffused in agricultural communities.

As a case in point, we give the following, copied from the *Farmer* of Oct., 1819. It shows that the fertilizing value of bones was as well understood at that time in England as it is now. The fact was reproduced here in the only agricultural journal published, but it was about twenty-five years before an effectual impression of its value was made on the agricultural community. The extract is from an English paper, as follows: "A correspondent from Grimsby, referring to the arrival of several vessels at that port from the Continent with bones, observes that the eagerness of English agriculturists to obtain this manure,

and the cupidity of foreigners in supplying it, is such as to induce the latter actually to rob the sepulchres of their forefathers. Bones of all descriptions are imported; pieces of half-decayed coffin-tire are found among them; and those skilled in anatomy have no hesitation in pronouncing many of the bones to have belonged to human beings."

TURKEYS HIRED OUT BY THE MONTH.—The next note we make is very appropriate to our times, when the hire of laborers is the burden of farm journals. A correspondent writes to the editor from Prince George's, the great tobacco county of Maryland, and urges farmers' wives to increase their flocks of turkeys. He says: "I state, from good authority, that several thousand turkeys may be hired out in Prince George's county, during the next summer, at the rate of twenty-five cents apiece per month and found. They will be returned when their work is done, and if they are overworked or die from any other cause, they will be paid for at the rate of seventy-five cents each.

"Some of your distant readers who know nothing about tobacco, may think this a quiz. But I assure you these wages were actually offered the last summer. Now it will certainly be desirable to encourage the breeding of this useful animal, and after having helped the planter in his crop, the turkeys themselves will be almost as good chewing as the tobacco." (Signed) "A CHEWER."

HOW THE EDITOR OF THE AMERICAN FARMER PROTECTED POULTRY YARDS AGAINST "THE BRITISH."—Mr. Skinner was, during

the war with Great Britain in 1812, the agent through whom all communications passed between the Government and the commanding officer of the enemy's squadron in the Chesapeake. He was in company with Mr. Francis S. Key, and detained with him aboard one of the enemy's vessels during the bombardment of Fort McHenry, celebrated as the occasion of the patriotic song of that gentleman, *The Star Spangled Banner*.

At such times, Mr. S. says, he was often compelled to "keep a fast" or to dine on poultry and live stock plundered from his own countrymen and friends. He was dining with Admiral Warren the day that a large detachment marched upon St. Michaels in September, and was invited to partake of some "*turkey poultis and oysters*." It was the first time he had heard the term, and never having seen turkeys eaten at that age, knew not what they meant. They were the size of dunghill fowls, and no doubt thoroughly impregnated with the contents of *tobacco worms*. He declined the invitation, and, dinner being removed, he took occasion to explain to the company their great utility in destroying the *tobacco worms* at that season—and he concludes, "We have some reason to hope that this insight into the natural history and propensities of the 'turkey poultis' had the effect of saving the flocks of many good housewives from the ravages of an enemy, from whose rapacity nothing was too sacred or too humble to escape."

THE AGRICULTURAL SOCIETY OF MARYLAND.—On page 63 notice is given of a meeting of this Society, to be held "at Gadsby's hotel, in the city of Baltimore, on the first Wednesday of June next."

WASHINGTON COUNTY FARMING.—A correspondent, writing from Hagerstown, laments the "lunacy" of Washington county farmers as follows: "At present, though we make excellent crops, every son treads in his father's precise footsteps, and our whole system of agriculture depends on the phases of the moon, and the signs of the Zodiac, as marked in the large Dutch almanac. We plant, we sow, we reap and mow; we fell trees, we make shingles, we roof our houses, secure bacon, make fences, spread manure, when the moon is auspicious. If we are ready before her ladyship, we wait the happy moment when her aspect shall say, proceed."

"I am willing to render to Cæsar the things which are Cæsar's; to the moon, the moon's, but I confess I should like to see her power somewhat circumscribed, and the limits of her reign ascertained."

NOTICES FOR A YOUNG FARMER.—Change your crops, and be satisfied with a good one on a small surface, well prepared; taking a pride in clean and neat farming, rather than wasting your labor and means, in extensive, slovenly and ill-requted culture.

Accommodate your plant to the soil, in preference to fitting your soil to the plant; every plant requiring a peculiar attention to its own habits and organization. The Author of Nature has placed in their proper element, both plants and animals, and they are suited to their designated positions. Sand or rock plants perish in clay or rich soils, as do those calculated for fertile ground in sand.

Plaster your old fields; which being full of decayed and inert vegetable matter, on which the plaster acts, will throw up pasture until you can cultivate them in course. We are not yet acquainted with all the properties of plaster. The general current of facts prove that salt, and salt air, are hostile to its operation. And yet there are instances where it has succeeded on our sea-board, as well as on farms remote from our coast.

SHALLOW SEEDING.—Wheat or barley, on worn lands, without good tillage and manure, will repay the expense of culture. However deep you plough, *seed shallow*. The coronal roots are formed near the surface, and the plume and radicles perish, in whatever depth the seed be deposited. The idea of clods mouldering in winter, and protecting the plants, and laying *deeper hold* when grain is ploughed in, are excuses for bad culture.—Pulverize your soil, and draw furrows for drains, when necessary, and the plant will root luxuriantly, and want no clod-mouldering.

SOW ORCHARD GRASS.—This grass will be permanent when clover fails. It is, on uplands, preferable to *timothy*, which is a great exhauster, yields but one crop of hay, and little or no pasture on dry soils; thus leaving the field bare of cover, and exposing it to the exhaustion of the sun and winds; whilst orchard grass, by its quick and repeated growth, affords a ceaseless cover and defence.

By thus recommending *Dactylis Glomerata*, for permanent pasture and hay, it is not in-

tended to cast the least reflection on the clover culture. This is now so commonly practised and its uses so generally acknowledged, that it is unnecessary to dwell on its excellent properties. But the clover is fugacious (short-lived) and the orchard grass sown with it, endures an uninterrupted vigor and usefulness, when clover, in dry seasons particularly, is burned or shrivelled, or has entirely departed, having lived out its short period of existence; or having been prematurely destroyed by frost, to which it is often a victim. The clover and plaster are so congenial, and the improvement of soils suitable for them, so universally known, that any detailed notices of them would now be superfluous. Raise your own orchard grass seed, and do not spare it on your fields. Thin sowing throws up tufts detached and coarse.

Work for the Month.

The growing power of the sun, quickening all nature, and stimulating all the objects of the farmer's care to renewed vigor and increase, urges him also to increasing energy to meet their demands upon him for all needful helps and facilities. The Spring time is the season of the husbandman's hopes. The springing grass and blossoming trees are premonitions and assurances of good things to come, which cheer and gladden his spirits, while they prompt him to his duties.

THE CORN CROP.

The great corn crop, truly our "staff of life," is the special object of solicitude this month, until the whole work of getting it planted shall be completed. Its importance must make it the engrossing subject of care, till all is done that can be done, by ploughing, harrowing, rolling, and manuring. These being completed before planting, it will not be found difficult to give afterwards, all the necessary cultivation before harvest. Let it be kept in view from the start, and it will probably be accomplished, to leave at wheat harvest a well-worked and clean corn field, not afterwards to be touched. A full crop is not to be expected without a sufficient number of plants on the ground, and close planting is not prudent if the roots are to be torn up by the plough or cultivator after the corn has tasselled. On a good, well-turned sod, worked and laid by early, three and a-half feet each

way will give room enough and make about as much corn as can well be made, but the distance must be increased and the number of plants diminished in proportion as these conditions are departed from.

ROOT CROPS.

Whatever root crops it may be determined to plant should, with the exception of turnips, be attended to in this month. Parsnips are most valuable for milch cows making butter, and need the earliest planting and the longest season of growth. Carrots should come next in order of planting, and are most valued for horses; substituting to advantage a portion of the grain given them. The sugar beet and mangold wurtzel, good for any stock, when confined to dry food, may well be planted up to the tenth of June.

All these, it should be noticed, need deep cultivation and abundant manuring, a well-stirred surface and careful thinning. The ruta бага and other turnips come in at a much later period, and offer the advantage of securing still a valuable crop, should the others be neglected or fail.

POTATOES.

We did not of course mean to include potatoes with the crops that must now be planted. Those who are afraid to postpone to the best period of planting the full crop, may plant some now, and at occasional intervals, and so take all the chances; but any time before the middle of June is too early for a maximum crop, and it is indeed very likely to be cut off to a minimum, by the heat and drought of August, when the tubers should be swelling.

A good sod, well turned, makes the best bed for potatoes, and if manured on the surface last fall, it were better than fresh manuring now. A full crop, however, is not to be expected without an abundance of manure at one time or another, and no crop pays better for an expenditure on this account. Be furnished, therefore, in advance with a proper supply.

TOBACCO.

As soon as the corn crop is planted, let every effort be made to get rid, at the earliest time, of last year's crop of tobacco. The rains of February and March and the winds of April have given the amplest opportunity for bringing it into "condition," and the weather of this month is usually favorable for handling it. Have hogsheads in readiness

and all necessary preparations made at once to pack and ship before the planting of another crop commands your attention.

See that the plant beds are kept thoroughly clean, and the grass allowed no foothold in them. Dress them well with compost or guano after each picking. Let the inexperienced planter be reminded of the paramount importance of the most careful attention to his beds of young plants. A failure to secure an ample supply, in due time, may involve the entire failure of his crop.

During this month, while the ground is not yet much heated, smaller plants may be set out than at a later period, and if the plants are very abundant, there is some advantage in thinning the beds and getting a portion of the heavy labor of planting done early. Otherwise there is little advantage in beginning very soon to draw the beds.

The chances are usually ten to one in favor of a large plant with good roots over a small one with small roots. It is more certain to grow, and has so much the advantage in time as to give rise to the saying, "a week in the bed is two weeks in the house"—that is, that the same plant may be two weeks earlier housed for having staid one week longer in the bed. Of course there is a due limit to this, for a plant which has begun to form the stock before planting is unfit to be planted at all. See that the plants to be set are nearly equal in size. The indiscriminate mixture of large and small plants in the same ground is a bad practice.

The whole tobacco ground having had, it is presumed, a good ploughing in the early spring, immediately after corn-planting, the final preparation for setting out the crop should be made by a ploughing not deep enough to disturb the inverted sod. With this ploughing is to be applied whatever manure is to be used. It would not be amiss, however, to postpone the application of fertilizers (except such domestic manures as have not been thoroughly decomposed) until the ground is about to be laid off for planting.

THE INDIAN PEA.

The Indian or field pea should be got into the ground in this latitude, not before the middle but by the last of the month. Sown broadcast, one and a half to two bushels of seed will be needed, but a much less quantity is sufficient, if sown in drills two and a half feet apart. The largest quantity is advisable

if sown exclusively, or chiefly, for improvement of land. All the varieties are good—the clay and black grow quickly and are most hardy. The vines make excellent fodder for cows, and the peas are only equalled by corn for hogs.

SORGHUM.

The sorghum or sugar millet makes good food for the early feeding of hogs, as well as for cows and horses. Where a mill is at hand for grinding the stalks, each farm may grow enough to make an abundance of very good syrup for home use.

HUNGARIAN GRASS OR MILLET.

The Hungarian grass, or some variety of millet, may be profitably used to increase the supply of winter provender. It makes a rich and well-relished fodder for horses, and cattle, and yields a heavy burden on rich or well manured loam. The ground should be put in fine condition, and everything in readiness for sowing by the first of June. A peck of seed makes a sufficient sowing.

BROADCAST CORN.

Should there be occasion for extra feeding in the yards in July and August, it will be well supplied by a sowing of corn broadcast at the rate of two to three bushels to the acre.

SHEEP-SHEARING.

This important work should not be too long postponed. Loss of wool and damage to the flock is the result of unnecessary delay. There should be sheds for protection, however, in case of a long rainy season after shearing.

The Vegetable Garden.

MAY.

It is to be presumed that the foundation-work of the garden, consisting of thorough digging and manuring, has been already done and many of the staple crops put in the ground as heretofore suggested. All the principal vegetables must be got in this month, and a general and careful cultivation carried on as grass and weeds show themselves. In gardening, as in another familiar domestic occupation, "a stitch in time saves nine."

Cucumbers, Melons, &c.—These should all be planted with no loss of time. Put in each hill a shovelful of good compost, or the manure from an old hot-bed for the first named, and

mix well with the earth, which should, if practicable, be a light loam. The hills for the canteloupe should be six feet apart, and supplied abundantly with fertilizing material.

Watermelon.—To the watermelon a very light soil is essential, and if the garden soil is not of that character, it is better to seek it elsewhere, or make holes twelve inches deep and three feet in diameter, and fill up well with light soil and compost. Plant a dozen or more seed to the hill, and thin to two after the plants are established. They should not be nearer than eight feet.

Squashes, Pumpkins, &c.—Plant these with plenty of manure, as above, giving ten or more feet distance. If desirable to preserve seed distinct, plant them at considerable distance from other vines of same species.

Corn.—Plant corn for a succession crop now for table use, and continue every three weeks. —For early planting take a warm, light soil.

Cabbages.—The Early Yorks and such others as have been planted out will require working and attention. If seed for principal crop have not been sown, it should be now done.

Beans.—The varieties of kidney beans should be planted from time to time for a succession of crops.

Carolina and Lima Beans.—Plant out crops of these fine kinds sufficient to insure abundant supplies. The Carolina is smaller than the other, but earlier. Plant four to four and a half feet apart each way, and in light soil, manuring in the hill with good compost.

Peas.—Continue to sow a succession of late kinds.

Lettuce.—Sow seeds for fresh supply of plants.

Carrots, Parsnips, Beets.—It is not too late to sow seeds of all these still. Keep out weeds and grass as they begin to come up. Thin out carrots to six inches—parsnips and beets eight to ten inches apart.

Celery.—Sow seed in a rich, moist place, and take care to secure abundant plants for principal crop, to be planted in July.

Onions.—Onions from seed should be thinned to three inches apart and the grass kept very carefully picked out.

Tomatoes.—Plants from hot-beds may be set out about the 10th of the month, and seeds be sown in a fresh border for late planting.

Egg-Plants.—Plant out these about middle of month, in warm, rich soil, and sow seeds for late crops.

Red Peppers.—Varieties of these, for pickling, &c., should be sown.

Turnip Seed.—Sow a few seeds for very early use, if wanted.

Salsify.—Sow seed of this fine esculent, and treat as directed for carrots. It is a very desirable Winter vegetable.

Water.—Make provision for an abundant supply of water in the garden. It is absolutely necessary in our very hot, dry summers.

The Flower Garden.

Bedding Plants.—Put out these during the first weeks of the month. Verbenas, Salvias, Heliotropes, Petunias, scarlet flowering and other Geraniums, are used for this purpose. Let them be well hardened before planting, by exposure in the pots to the out-door air.

Annuals.—Continue to sow annuals, and thin out those that need it, giving room enough to make strong plants.

Roses.—To have Roses bloom well, water abundantly if the weather be dry, with manure water. If the green fly be troublesome, wash with the syringe on two or three successive evenings with a weak decoction of tobacco.

Dahlias.—Put these in the ground with plenty of good compost.

Fuchsias.—When these are put out let them be set where the sun will not strike them and give occasional waterings.

Gladiolus, Tuberose, Carnations and Picotees should be now planted out.

Chrysanthemums.—To ensure good bloom, keep these well cultivated in rich soil.

Lawns and Walks.—Keep these in the best order—the former by close shaving and rolling whenever the grass can be taken hold of by the scythe, and the latter by rolling and sweeping once a week.

The Fruit Garden.

Thin out superabundant fruit from peach, apricot and nectarine trees. The peach should be unsparingly thinned if we would have fine fruit, as it is especially given to overbearing, except, as has been often the case of late, when the frost does this work for us too effectually.

Newly-planted Trees should have occasional watering in hot and dry times, throwing the water over the foliage.

Strawberries.—These require much water when setting and forming their fruit.

Plan of a Hog Pen.

PECKATINE, VA., March 30th, 1869.

Editors of American Farmer:

GENTLEMEN: A few days ago, whilst looking over an old number of the "American Farmer," (of which I have a dozen or more bound volumes,) I saw an offer of six volumes of the "American Farmer" made by Mr. S. Basset French, of Richmond, Va., as a premium for the best plan of a hog pen; to which offer you added six other volumes. Supposing that the subject is now equally as important as then, I send you a plan of a pen which I have just had made here. The main objects

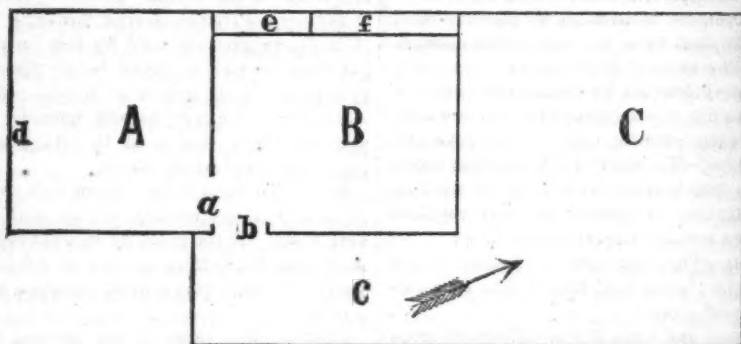
to be kept in view are: first, the comfort of the hogs, and second, the profit to the owner. My pen is so constructed that the hogs have always a dry yard to eat in, and a warm, dry bed, under cover, in which they sleep. The large pen is the receptacle of all slops, rubbish, weeds and dirt from walks; indeed, of everything which will rot. If, upon an examination of the plan you think it good, you are at liberty to present it to your readers through your very valuable columns.

I am, sirs, very respectfully,

Your obed't serv't,

Hague P. O., Va.

JOHN MURPHY.



DESCRIPTION.

A—represents the sleeping apartment; a house made either of boards or rougher material, with roof slanting towards *d*.

a—is the entrance to this house.

B—is a dry, clean yard, in which the hogs eat, and in sunny weather bask in the sunshine.

b—is an entrance into *c*, a passage about four feet wide leading to the large pen (*C*) where the manure is made. This passage is kept clean, and as the manure is formed in the large pen (*C*) it makes an inclined plane from this passage, which enables the hogs to go into *C* without difficulty.

The Arrow indicates the plain.

e—is the water trough.

f—is the feeding trough.

This pen can be constructed of the coarsest and roughest material, unless a neater one is desired. Two men, with a wagon or cart, can easily make it in a day.

The pen (*C*) can be made high enough to hold any quantity of material for manure.

I have not given any dimensions, because they can be varied at pleasure.

A rough cover can be put over the pen (*C*) if desired.

LEACHED WOOD ASHES.—An English farmer gives the following in regard to the value of soap ashes—

"My opinion of soapers' ashes is confined to the application of it as a top-dressing on pasture land. About twelve years ago I agreed with a soap boiler for 1,500 tons of soapers' ashes. I used to apply about 20 wagon loads per acre, and a single bushing would let the whole in. I was laughed at and abused for my folly; the wise ones alleging that my

land would be burned up for years, and totally ruined; all of which I disregarded, and applied my soapers' ashes every day in the year, reeking from the vat, without any mixture whatever. I tried six acres mixed up with earth; but I found it only doing things by halves. My land never burned; but from the time of the application became a dark-green color, bordering upon black, and has given me more, but never less than two tons per acre ever since."

From the Richmond Whig.

Scientific Agriculture.

A Talk with the Farmers of Albemarle, by Professor Mallet of the University of Virginia.

[EXTRACT.]

The following will exhibit a general view of the various substances which enter into the general composition of plants:

FOOD FOR PLANTS.

Organic Substances.—Carbonic acid, water, ammonia and nitric acid.

Inorganic Substances.—Potash, (soda,) lime, magnesia, (oxide of iron,) phosphoric acid, sulphuric acid, (silicic acid,) (chlorine.)

The substances in brackets are only found in small quantities, and are not *absolutely* essential to the life and growth of all plants, or rather are of minor importance.

The supply of atmospheric food is unlimited and constant. The supply of mineral food is limited by the fixed location of the plant, which must find its supply of food within the reach of its roots as they extend into the soil. The elementary composition of the air is constant in all latitudes, while specimens of soils constantly differ even in almost the same locality. Certain soils contain larger quantities of the mineral food of plants than others; hence the composition of the soil is a matter of the highest importance. To improve and increase the cultivation of plants, as any efforts we may give to increasing the fructifying influences of the air, will be rendered futile by the facility with which its component parts are shifted from place to place by every wind that blows, we must look only to the improvement of the soil, which can and must be changed if the growth of plants is to be improved by any direct application of artificial means. An important consideration to be kept constantly in view, is that each particular plant requires particular elements for its growth, each and all of which in definite proportions are necessary to its health. This food can only be taken up by the plant in solution—that is to say, manures to benefit the growth of a plant must either be in solution, or in a condition to be dissolved.

Farmers must not on this account believe that they run the risk of losing soluble manures on their application to the soil—for it is readily demonstrable that the soil possesses the very peculiar property of absorbing, or rather partially fixing all those substances

which, as manures, enter into the composition of plants or are useful in improving the soil.

The speaker here filled a glass funnel with a specimen of soil taken at random from the neighborhood, and after exhibiting the test for ammonia, poured a solution of sal. ammonia (muriate of ammonia) on the earth. After a short delay, he by the same test exhibited the fact that most of the ammonia had disappeared from the filtrate and was replaced by a very decided proportion of lime, which did not exist at all in the original solution. The chlorine of the muriate was not diminished in quantity, having exchanged its ammonia for the lime of the soil.

All soils consist of two parts—the insoluble or non-available part and the soluble or available part. The proportion of the latter is kept up in a measure by the disintegration of rocks and rocky particles imbedded in the soil. Inasmuch as all plants do not demand the same elements and in the same quantity for their growth, some soils may be very fertile as to one plant and barren as to another.—Hence the advantage of allowing land to rest for a certain period, or the system of rotation of crops. The subject under consideration is not, however, either the resting of the land or the rotation of crops, but manures—the application of which will enable the farmer to restore at once to his soil all the elements which he has removed with the harvest, and thus perpetuate the production of any grain crop on the same piece of land.

From what has been said, it is manifest that in selecting manures, the farmer must be guided by the wants of the crop he intends to raise. The following table will exhibit the relative proportion of mineral substances contained in the ash of the various principal crops of this section:

	Wheat.	Corn.	Tobacco.	Hay.
Potash.....	34	43	31	49
Soda.....	6	1	5	5
Lime.....	9	11	43	17
Magnesia.....	11	12	11	7
Phosphoric Acid.....	35	28	5	15
Sulphuric Acid.....	5	5	5	7
	100	100	100	100

As the whole plant has been tested, including roots, stems, leaves and seed, the silicic acid and chlorine are omitted.

These proportions are invariable, the plant having the peculiar faculty of selecting from the soil the peculiar elements which are ne-

necessary for its organization and growth, nor can one element be substituted for another. We have a remarkable example in the case of wheat. There is a striking similarity between the two alkalies, soda and potash, in their various properties, yet we find that wheat grown in the mountain districts where potash abounds in the soil, contains no more of that peculiar element nor any less of soda, than wheat grown on the sea coast, where the soil is greatly impregnated with soda and has comparatively less potash. The last table is not a fair representation of the absolute quantity of the food of plants which is removed with the various crops. As the weight of the harvest varies greatly with each separate plant, it is important to call attention to the following table, in which is exhibited the number of pounds of mineral substances removed by average crops per acre:

	Wheat, 10 bus.	Ind'n Corn, 25 bus.	Tobacco, 1000 lbs	Hay, 1 ton.
Potash.....	3.3	4.9	54.1	34.2
Soda.....	4	3	7.3	9.4
Lime.....	4	5	73.1	15.4
Magnesia.....	1.3	2.7	22.1	6.5
Phosphoric Acid....	5.	8.2	7.1	8.2
Sulphuric Acid.....	2	1	7.7	6.8
Total.....	10.6	16.7	170	86.6

It will be observed, then, that a proper understanding of the second and third tables is absolutely essential for the compounding of artificial manures. The latter gives the composition of the harvested product, and the former indicates the elements which are necessary to the production of the whole plant. It is not sufficient to supply the elements of the mere grain that is to be harvested, but account must be taken of the elements which are necessary to the formation of those organic structures of the plant which are a prerequisite to the production of the harvest.

The speaker next proceeded to point out the various sources from which the various elements are supplied in the form of manures. The sulphuric acid is abundantly and cheaply supplied in the form of Plaster of Paris.

The phosphoric acid, in form of bones and certain guanos, except the Peruvian, which consists mainly of ammonia salts, and, as such, acts as a stimulant, without possessing any special property as a permanent fertilizer, the small quantity of inorganic or mineral substances it contains being in too small amount seriously to affect final results.

Magnesia, which is not required in very large amounts, exists in greater or less quantity in almost all soils; but, if required, may be obtained from the magnesian limestones. Soda is supplied by common salt and the nitrate of soda; potash from wood ashes and the decomposition of land plants, and the residuum of the salt works and saltpetre.

He gave a very interesting account of a recent discovery made in Prussia of an immense deposit of native sulphate of potash found at the depth of 800 feet in sinking a shaft to explore for rock salt. The bed is 160 feet deep, and appears to be almost inexhaustible. The mining is conducted on a large scale. Three years ago, 125,000 tons were disposed of to the various factories, and is now found in the market in degrees of purity varying from 10 to 95 per cent. of pure potash salts.

It is used on a large scale in Germany, and has been exported to distant countries. It has been found well adapted to the improvement of the quality of sugar beet, tobacco and grain, flax, hemp, fruit trees and vines, in certain stages of their growth, in Germany, and in Cuba and Brazil the sugar cane and tobacco.

He exhibited a specimen of stone found on the uplands of Ivy creek presented by Dr. John R. Woods. It is known in that vicinity as calico rock and is very rich in potash, yielding by a very crude and incomplete analysis, seven-eighths of one per cent. of potash.—Eight pounds of it are equal to one pound of the best wood ashes. Dr. Woods has found great advantage from breaking it up and spreading it on his lands.

The objection to the use of potash and soda in artificial manures has been fully answered by the experiment exhibited a few minutes since with the muriate of ammonia. The soil possesses the property of absorbing or partially fixing just those elements that are necessary for the support of the plant.

He did not wish, however, to be understood as saying that potash, although indispensable, is the only thing which our soils need for making them productive. No one ingredient is a panacea.

Compound manures are essential and necessary. As the structure of the plant is complex, so must the farmer turn his attention to every source that may supply him with those elements which plants may require for their support.

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After deciding on the particular manure to be used, attention must be given to its state of mechanical division. It is imperative that the ingredients should be reduced to the most minute state of division, and should be thoroughly mixed in proper proportions. The least amount of any one element controls the value of the whole mass, as the proportions for each plant is definite and fixed. The manner of the distribution, too, is important to be observed if even crops are desired.

Ammonia falls under the head of stimulant manures, which by pressing the plant forward in the earlier stages of its growth, urges the plant to take up the inorganic substances from the soil.

The rain, as it falls through the atmosphere, absorbs and conveys the ammonia to the leaves of the plant, but this is not always sufficient to the wants of the vegetable economy, which must be pushed forward; the requisite amount must therefore be artificially supplied. Peruvian guano is the best, if not the cheapest, source of supply. To rely on this alone, must work a permanent injury to the soil by forcing the plant, so to say, to take up more of the inorganic elements than can be properly spared from the soil.

Stimulant manures should be used only when necessary, and then along with other and permanent fertilizers, or ordinary mineral manures, so as to keep up the fertility of the soil.

Measures should be taken to preserve all the stable and barn-yard manure which can be produced. In one year a single cow will produce an amount of manure which is equivalent to 750 pounds of the best guano. It is too common for farmers to leave this valuable product of their stables and yards exposed to all the vicissitudes of the weather until it becomes as valueless as sawdust for all fertilizing purposes.

Farmers should endeavor to increase their stock of knowledge by carefully conducted experiments, in which the absolute weight and cost of their applications to the soil, in the way of seed, manure and labor, should represent one side of the account, and the weight and value of the products harvested represent the other. In no other way can they arrive at intelligent and satisfactory results of their experiments. The effects of the seasons should be noted, and all temporary influences should be taken account of, so as

to arrive at a fair average result. A bad season may destroy all expectations based on the best tillage and most careful manuring, while a good season may be the means of producing fine crops under otherwise adverse circumstances. It is therefore important to note and observe every circumstance that may affect final results.

American Sumac.

There has been considerable inquiry of late as to the value of this plant for economical uses, especially that growing in Virginia, and some parts of our Southern States. Mr. A. S. Macrae, Oil and Produce Broker, Liverpool, writes to the *New York Journal of Commerce* that he received a lot of American Sumac from Philadelphia, a sample of which was analyzed for him by Huson & Arrott, chemists of Liverpool, with the following result:

Tannin,.....	20.80
Sand,.....	.75
Vegetable matter,.....	78.45
	100

On this result Mr. Macrae says: "The average of tannin in the best Sicily sumacs, as stated in my last letter, is 16 per cent. (authority, Professor Muspratt.) Our first commercial analysts have seen it as high as 26 per cent. (and this only one sample within the last twelve months,) and America (Philadelphia) is producing at 20 per cent. Now for value. The lowest sumacs of any kind yields 7 per cent. tannin, and sells at £8 10s. per ton—this is French. The Sicily sumac, giving 16 to 26 per cent., sells at £13 to £24 per ton. American, therefore, with 20 per cent. tannin, should command (and will in time) £16 per ton! Now if, as the *Norfolk Journal* states, sumac leaves are to be had in Virginia for the gathering, what a trade has been neglected which may at once be developed."

A SUBSTITUTE FOR COFFEE.—From chemical analysis it appears that the seeds of the asparagus when dried, parched and ground, make a full flavored coffee, but little inferior to Mocha, containing in common with tea and coffee, the principle called taurine. Dry the asparagus berries well, after being thoroughly ripened, then rub them on a sieve, thus the seeds are readily separated.—*Journal of Health.*

From the London Times.

The Camp Sewage Manure Farm At Aldershott.

One of the most important, because one of the most conclusive, experiments yet made with sewage as an irrigating manure has, after three years, been brought to a highly satisfactory result on the most arid of all the sandy plains which stretch in stony barrenness beyond the confines of the North Camp at Aldershott. There are few subjects which have excited more controversy among great theoretical chemists than the money value of sewage manure as a great fertilizing agent for agricultural purposes. Some of the highest authorities have pronounced it valueless, and some of the highest authorities also have pronounced it invaluable. The particles held in suspension—that is to say, the solid matter, which, of course, included filth of all descriptions, was at one time held to be all that was useful and fertilizing, while by others it was as strongly maintained that only the particles held in solution—that is, in a liquid state—had any value at all. By these latter the solid manure of sewage was regarded as the leaves, the liquid manure as the tea. To do farmers some justice, however, they have from the very first strenuously supported the theory of the great value of liquid sewage for the irrigation and fertilization of almost all kinds of green crops. Some few practical attempts have been made to utilize it, though on a small scale, but always with the same result—namely, to show that millions of gallons of sewage which might be made actual sources of wealth to the farmers in the neighbourhood of great towns was not only being daily wasted, but wasted in the most noxious manner, by poisoning our atmosphere and polluting our rivers. But the only two actually great practical experiments which have been yet tried, and tested by the severest of all tests—that of the balance-sheet—are the sewage farms at Barking and the new sewage farm at Aldershott, to which we are now referring. Both are of nearly the same size, and both are conducted on very much the same principles, and both start from the same basis—that of making liquid sewage their only source for irrigation and fertilization. Without, however, detracting from the great results which have been achieved at Barking, it is only fair to say that the operators commenced their work on meadows which for years past have been good

grass land. But the soil on which the experiment has been made at Aldershott, has nothing whatever in common with that of Barking. An analysis of its constituents shows it to be worse even than the Maplin Sands. It was a mere tract of sand covered with large flints of irregular level, and broken here and there with sandy knolls on which small clumps of heather were sparsely strewn. The component parts of the soil were still less hopeful. It contained no less than 95 per cent. of silica, 3 per cent. of protoxide of iron, which is almost poison to vegetation, and 2 per cent. of the vegetable refuse of withered heather. The stony desert itself would have seemed preferable as a farming investment compared to this land, yet, extraordinary as it may appear, this once hungry wilderness is now a rich and thriving farm, and the reclamation, or, rather, formation, has all been accomplished in three years, and all with the sole aid of liquid sewage and careful and scientific farming.

A stony desert this portion of the camp environs would, no doubt, have remained till this very day but that in the course of time improvements came upon the ground. The cesspools in the South Camp were found to be intolerable and unhealthy nuisances, so, as the permanent barracks at the South Camp were being drained, it was determined to drain the South Camp too. This was done, but what was not done was to provide for the disposal of the sewage, which cost the Government some 1,200*l.* or 1,500*l.* a year to get rid of, and which after all the processes of disinfecting and deodorizing was still found to be so bad as to lead to an injunction in Chancery being got to prevent its being run into the waters of the river Blackwater, which it polluted. In these straits, Mr. James Blackburn, a Scottish gentleman farmer of great experience, and with ample means, came to the assistance of the camp authorities, and offered to convert the stony desert we have mentioned into a farm, if the camp sewage was given to him to be used in his own way, and the land leased to him for 16 years. These terms were at once accepted, and Lord de Grey, when at the War-office three years ago, gave all aid in his power towards carrying out the plan.

The mode in which all the processes are effected is in the highest degree simple. The site of the farm, which is 100 acres in a ring fence, is in the flat bottom of a valley many feet below the South Camp and South Camp

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permanent barracks, and at a distance from them of about two miles. From these spots the sewages is brought in 18-inch pipes, laid at a general incline of about 25 feet to a mile. The incline, however, is by no means uniform, and in some cases is so slight that the sewage moves very sluggishly through them. The pipes, too, are considered too large in their diameter, and as not giving sufficient scour to bring down all the sewage with them. In this manner it is conducted to the entrance of the Camp Farm, just on the south side of the Basingstoke Canal. An excellent provision is made for the overflow of the storm water of heavy rains, which is diverted from the main sewage in another direction. At the Camp Farm Mr. Blackburn takes charge of it and conducts it in five-inch pipes, laid at a quick incline, to the edge of the lands to be irrigated. A small ten-horse power engine, with a centrifugal pump, is sometimes used for raising the sewage to the higher levels.

To prepare this little desert for the reception of the manure required no little time and labour. All the knolls had to be levelled, the cart tracks filled up, and whole acres laid at a gentle incline, sufficient to make the sewage flow from its own gravitation down between the ridges of the sands to be manured. The levelling was the longest process, if not the chief one, for when this was done all was ready. The sandy soil, with its crust of furrious earth below, was first broken up with a six-horse plough, turning a cube of soil about 14 inches by 16 inches. After this a subsoil plough was driven through it to a depth of from six to ten inches, and 50 acres of land being thus prepared, it was irrigated, or rather saturated, with the sewage. About 170,000 gallons or 790 tons of sewage come from the camp each 24 hours. This as it arrives from camp is carried by the pipes into large settling pits, where the solid matter almost instantly deposits itself, and from there the liquid sewage which remains above is let off into the fields as they are now, but which three years ago, were dry, stony wastes. The amount of solid deposits which accumulated in these settling pits is trifling when compared with the vast bulk of sewage which passes through them. At the end of a year, when some 275,000 tons of sewage had passed through them not more than 250 loads, or about 300 tons, remained in them. This solid matter is found to be of very little value as a

fertilizer. Nearly 100 tons were placed on one acre—that is to say, it was all covered to the depth of nearly two inches with the solid matter, which was all turned in by the plough yet the yield from this acre, which was planted with potatoes, was below the average of the acres tilled only with the sewage manure. After the manure has passed through these pits, when the absence of velocity in the current of the water allows the solid matter to settle almost instantly, the liquid was in the first year run off on the first 50 acres prepared. For the first year these 50 acres of thirsty sand took every drop of the camp sewage at the rate of 170,000 gallons a day. No deep drainage of the land was necessary, for the sand absorbed almost all it could get. By the end of a year it was fit for sowing with Italian ryegrass, a green fodder which seems to thrive more abundantly in this country even than in Italy, and which produces its abundant crops five or six times in a summer. The land was laid out in the old Scotch drill system, and the liquid manure let flow through 12 inch gullies about 20 yards apart. These at short lengths were dammed with clay, so that as the sewage overflowed the land on either side was saturated with the manure. In this way the whole was dressed. A continuous dressing was given the first year, as we have said; three dressings were given next year, and only two last year. This year it is believed that the ryegrass will do with only one.

As the reclaimed lands require less sewage, other barren wastes are brought under the influence of the surplussage and got ready in a like manner. Thus there are now 75 acres under cultivation at Camp Farm, and before the end of next year the whole 95 acres will be bearing green crops. It is green crops especially that Mr. Blackburn produces. Cereals he thinks can be got more abundantly and as cheaply from abroad, and that the real object of the English Farmer should be to rear as many green crops as possible, with a view to cheapening meat and milk. Thus, last year, when hay has been wanting, no less than six crops of Italian ryegrass have been gathered from the Camp Farm, and all of the most luxuriant kind. The first was cut on the 11th of April, the second on the 26th of May, the third on the 25th of June, the fourth on the 22d of July, the fifth at the of August, and the sixth in October. The yield of the year has been on the average from 10 to 12

tons per acre. It is sold on the ground at prices varying from 18s. to 22s. a load.

An absurd prejudice used to exist against the use of this fodder, which is now, like most other prejudices, fast disappearing. The highest veterinary authorities have pronounced it to be among the best possible food for milch kine, and for ailing or weakly horses almost invaluable. When meant for cow food it is cut shorter, at the rate of about six crops a year; for horses it is allowed to grow stronger, and only four crops are cut. The four horse crops cut last year on Mr. Blackburn's Camp Farm, have averaged more than 2ft. 6in. in length, and one exceptional crop was above 4ft. high. This crop retains the moisture of the manure longer than any. After being two years under Italian ryegrass Mr. Blackburn sows table turnips, swedes, cabbages, and potatoes. The latter require very little of the sewage manure after the ground is once prepared. Gas lime from the gas works, after about a twelve month's exposure to the air, is used as a top dressing, and superphosphate of lime is also laid before the potatoes, which, with these cheap aids, bear well and healthily, yielding about six or seven tons to the acre, of which, about four tons per acre are marketable.

One of Mr. Blackburn's great secrets is to get the liquid manure on the land as soon as possible. Sewage very rapidly decomposes when exposed to the air, and with its decomposition and evaporation of its gases half its fertilizing elements are lost. A decomposed liquid manure he considers as almost injurious to the land. When the channels of liquid sewage flow about the Camp Farm there is little or no unpleasant smell, except close by the ducts themselves, and even there it partakes more of the scent of strong ammonia than anything else. The unpleasant smell chiefly hangs about the small space of the settling pools where the solid matter is deposited. For the ryegrass the manures containing ammonia and phosphoric acid are found to be the best; and for potatoes and bulbous roots generally those containing potash are most useful.

Thus, in the space of three years, this, which used to be poisonous matter, has been turned by skill into one of the most useful and fertilizing agents that has ever been placed at the disposal of the agriculturalist, and while the soil reaps the benefits of getting

back the vegetable constituents which it has given forth, the Camp authorities at Aldershot are saved all the trouble and expense, and cease to pollute all the dykes and rivers round them. In plain terms, sewage, which used to be an endless trouble to get rid of, is now likely, when properly applied, to be a source of continued prosperity to farmers who use it properly, even over the poorest lands. No greater proof of its success can be afforded than by the spectacle of the Camp Farm at Aldershot, which in three years has been reclaimed from a sandy waste into a flourishing homestead.

Value of Sumac as a Wine.

We have received a communication from a doctor of this city, who advocates the home use of sumac as a wine in certain physical diseases and afflictions. We recommend attention and application. It is a popular belief that the sumac plant is poisonous, or at least of no earthly use whatever. But it is now fortunate for us to know that it is really capable of great practical good.

"In a late number of the *Independent* the very pleasant article entitled 'Home-made Wines' must have presented to almost every reader some surprisingly new and interesting information. The fact of wines being derivable from so many other berries besides grapes—namely, currants, cherries, raspberries, gooseberries and blackberries—is a novel and very felicitous idea, as their general properties are very nutritious and wholesome.

"But one of the most interesting and valuable vinous productions of modern times is derived from another fruit, which scarcely any other individual than its discoverer could have imagined it possible to be created.

"The fruit alluded to is the sumac berry, technically known as *Rhus Glabrum*, which contains certain chemical ingredients different from almost every other vegetable, and which are very valuable in some special diseases. This fruit has been many years included in the list of *Materia Medica*, but has only been used in the form of watery solution until recently, when a scientific clergyman, seeing how advantageously its merits might be increased, made a vinous preparation of it, which the medical profession have found to be a very improved and advantageous article in all disorders requiring the peculiar elements of the fruit. It has been noticed very favor-

ably in some medical journals, and its employment in catarrhal, diarrheal, dyspeptic and some other disorders, has proved very appropriate and useful.

"Although it is a wine, and has a very agreeable flavor, it cannot produce intoxication, nor is it ever likely to be imbibed except for remedial purposes. It has been found very efficacious in cholera morbus, and other nauseous and diarrheal diseases, being known to possess a very astringent property, derived from its vegetable ingredients (chiefly tannic and malic acids.) In case of another eruption of the epidemic cholera in this country, it would doubtless be found one of the most effective remedies ever known, and would probably save a great many lives, it being both astringent and tonic. It has proved also to be a very useful refrigerant in typhus and other forms of fever.

"We, therefore, advise an extended cultivation of the plant, and the preservation of the berries in all parts of the country, for the preparation of the wine in case of the occurrence of any of the diseases above mentioned. It is popularly known as rhus wine, and technically called by physicians and apothecaries *Vinum Rhus Glabrum*."

CHEMICAL ANALYSIS OF THE SUMAC BERRY.

The chief elements of the *Fructus Rhus Glabrum* were by medical chemists long since determined to be: 1st, malic acid, in combination with lime, in the form of bimalates; 2d, free malic acid; 3d, tannic acid; 4th, oil, fixed and volatile; 5th, red coloring matter; 6th, gallic acid. (See Wood & Bache's U. S. Dispensatory, pp. 710, 711.) It is very clear that this old statement of the elements of this fruit at once demonstrates the medicinal character of the wine derived from it, and clearly indicates its value and the direction in which it should be used. Among the acids of this fruit it is plain that the tannic acid predominates, and that lime is as positively the alkaline base of the sumac as potash is of the grape. As, according to Professor Mulder, the element of longevity in long-enduring wines is the tannic acid they contain, no doubt can be entertained of the durability of a wine made from the *Rhus Glabrum*.—*N. Y. Indep't.*

Common swearing argues in a man a perpetual distrust of his own reputation, and is an acknowledgment that he thinks his bare word not to be worthy of credit.

Cultivation of Broom-corn.

It is usually said that any soil which will produce Indian corn, will produce broom-corn. But while this may be true in a general sense, a profitable crop of broom-corn requires cleaner, warmer, and richer land than that on which Indian corn is often raised with advantage.

Broom-corn does not often germinate as soon, or grow so rapidly for the first few weeks, as Indian corn. Consequently it is more liable to injury from weeds. It is of the first importance to plant only on clean land, otherwise the labor of hand hoeing and weeding will be very great, and if delayed for a few days the crop may be severely injured. If the land is clean, a **A**-shaped harrow, with a tooth taken out in the centre, drawn along the rows, will destroy the small weeds, break the crust of the soil, benefit the plants, and save a great amount of hand hoeing.

Broom-corn is often planted on the same land year after year, and when the land is very rich, such a course is most profitable, as the thorough culture of the crop, makes the land cleaner every year, and there is less labor in hoeing. But when broom-corn is raised in rotation on the upland portions of the farm, a good plan would be to plough under a heavy crop of clover in June, and summer-fallow, and fall-fallow the land by repeated "cultivatorings," harrowings, and ploughings, to kill the weeds, and make it rich and mellow. A soil so treated would be likely to give double the growth obtained on land planted without any previous preparation. The expense of hoeing and cultivating would be greatly reduced, and the profits of the crop would be quadrupled. The yield varies from 500 lbs. to 1,500 lbs. per acre. A poor crop is grown at a loss, a good one at a large profit. It is said that few people have ever engaged extensively in growing broom-corn without ruining themselves. The fluctuations in the price may have something to do with this result; but it is not improbable that it is also due in part to the profits derived from a small crop planted on well-prepared land leading to an extensive planting on land in poor condition. The labor of hoeing would be far greater per acre on the latter, and if it could not be obtained in the right season would be still farther increased, and would be likely to lead to discouragement, neglect, and failure.

If the land is warm, dry, clean, mellow, and rich, the crop should be planted early—say as

early or a little earlier than Indian corn. As the plant grows very slowly at first, other things being equal, early planting is very desirable.

From the remarkable effect which plaster, on some soils, has on the growth of sorghum, it is probable that it will prove equally useful for broom-corn. Unleached wood-ashes are also highly recommended; but if the soil is in good condition, we should not look for so great an effect as from the plaster. The great point is to encourage the early growth of the plants and the development of the roots. And plaster, in the case of sorghum, and probably in that of broom-corn, seems to have this effect. In Mr. Harris' experiments on sorghum, on a light loam soil near Rochester, N. Y., the plot having no manure produced only one and a half tons of stalks per acre, while the plot having 250 lbs. of plaster applied with the seed at the time of planting produced nearly twelve and a half tons per acre. (See *American Agriculturist*, vol. 21, p. 361.) One ton of unleached hard-wood ashes produced only a little over eight tons. Of all the manures used, plaster was not only by far the cheapest, but had the greatest effect.

When planted by hand, it is better to mark off the land in rows, three feet apart each way, and drop a dozen or more seed in the hill, and afterwards thin out to eight or ten plants; but when a drill is used, the rows should be three and a half or four feet apart, and the seed drilled so as to have a plant every six or eight inches. Thinning out, should never be neglected, as it is very objectionable to have the plants too thick.

The crop must be kept clean. This is a point of the greatest importance. As the plants are quite small, a light cultivator, such as is used in the market-gardens, is far better at first than the ordinary corn cultivators. Start it as soon as the rows can be distinguished, and run it as close to the hill as possible, without smothering the plants or disturbing the roots too much. If the land is clean, and the rows are straight, the cultivator will leave little work for the hoe and fingers. If plaster has not been used with the seed, it may be dropped on the plants at the first hoeing. The plaster will probably do more good on warm upland, than on moist bottom land. The cultivator should be used as long as a weed is to be seen. Much of the success depends on thorough and clean cultivation.

As soon as about half the seed is out of its milky state, pass through the rows and break down the tops about one foot below the brush, bending them towards each other. The object of doing this is to prevent the brush from becoming crooked from the weight of the seed. It also accelerates the ripening.

In this state the crop is "tabled." A man walks backward between the rows, and breaks down the plants from eighteen inches to two feet above the ground. Cut the brush close above the upper joint, and lay it on the "table" to dry. In fair weather, this will take four or five days. Then tie into bundles, and draw to the barn. The seed is separated as soon as the brush is perfectly dry. This is done by hand or by machinery, according to the extent of the crop. A small crop can be cleaned with a comb made by sawing teeth in the end of a board, and pulling the brush through until the seed is stripped off. The amount of seed varies from fifteen to thirty-five bushels per acre, according to the luxuriance of the crop and the time of cutting. The brush is better when the crop is cut while the seed is in the milk, but in this case the yield of seed will be light. The seed is quite nutritious, and is usually fed out on the farm. As a marketable commodity, it is very uncertain. Sometimes it is \$5 per bushel (for seed), and then again it is not worth 50 cts.—*American Agriculturist*.

Cabbages as a Field Crop for Dairy Stock.

Among the useful plants for the fall feeding of milch stock, the cabbage holds an important place. It is not appreciated as it should be by the dairy farmer. It is nutritious, easily cultivated, yields a large amount of food upon an acre, and it is ready for use at a time when grasses and other succulent plants begin to fail.

When grasses are touched with frosts in the fall, they lose much of their nutritive element, and unless cows can be supplied with additional food, they fall off rapidly in their milk. It is just at this season that the cabbage has matured and comes in to supply the gap between "frost-bitten grass" and hay. The dairy farmer will find, if he can keep up a good flow of milk from his cows during October and November and the early part of December, quite an item will be added to his profits beyond what they would be if the milk is allowed to fall off, as it surely must if the

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stock get nothing but "frost-bitten grass" and coarse fodder. But a ration of cabbage morning and evening after milking, will not only keep the quantity of milk good, but its quality will be improved, as the "cream pots" will abundantly show. We prefer feeding cabbage to cows in milk, immediately after the milk is drawn, rather than before milking, as a tendency to any objectionable flavor being imparted to the milk from the food, will be avoided.

To grow cabbage successfully, good soil and an abundance of manures are required. The general impression is that cabbage is an exhaustive crop, but when compared with the amount of food produced on a given quantity of land, it is no more exhaustive than a root crop. As many as 50 to 60 tons of cabbage have been grown to the acre. Crops like this must remove something from the soil, and the same may be said of all crops that are valuable, but the cabbage being a large leaved plant, takes up large quantities of ammonia and carbonic acid from the air. It is affirmed that the amount of nitrogen in the soil is increased rather than diminished during the cultivation of this crop, even in cases when no ammoniacal manures are employed. It is not advisable, however, to grow cabbages for a series of years on the same plot of land, as the excrementitious matter thrown off by the plants becomes, after a time, unfavorable to the succeeding crop.

Dairymen located within reach of good markets often make large profits from growing cabbage. A considerable proportion of the large, sound, hard heads, are selected for sale, while the loose leaves and soft heads are fed to cows in milk. Even the stalks are made available by being run through a root cutter, and when thus fed, are regarded quite equal in nutritive value to turnips.

In regard to the nutritive value of cabbage compared with turnips, the following analyses may, perhaps, be of interest. The composition of the cabbage, according to Dr. Thomas Anderson, Chemist to the Highland and Agricultural Society of Scotland, gives in 100 parts

	Outer leaves.	Heart leaves.
Water	91.08	94.48
Flesh forming compounds.....	1.63	0.94
Non-nitrogenous matters, gum, sugar, etc.....	5.06	4.08
Mineral matters.....	2.23	0.50
	100.00	100.00

Dr. Voelker's recent analysis of the cabbage shows its composition in 100 parts to be as follows:

Water.....	89.42
Oil.....	0.08
Soluble flesh-forming matters.....	1.19
Sugar, digestible fibre, etc.....	7.01
Soluble mineral matters.....	0.73
Insoluble flesh forming compounds.....	0.31
Woody fibre.....	1.14
Insoluble mineral matter.....	0.12
	100.00

The following are average analyses of the Sweedish and Aberdeen turnips in 100 parts:

	Sweedish turnips.	Aberdeen turnips.
Water.....	89.58	90.43
Flesh-forming matter.....	1.44	1.14
Non-nitrogenous matters, fat, gum, sugar, etc.....	5.80	5.46
Woody fibre.....	2.64	2.34
Mineral matters.....	0.63	0.63
	100.00	100.00

Milch cows are extremely fond of cabbages, and they are a milk-producing food. We have grown them for our own dairy feeding in the fall, as above indicated, and always with a considerable profit above the cost of cultivation. We have kept cabbage for winter use with good success by taking off the outer leaves and packing in large casks, with layers of damp straw, placing the casks, when filled, in a cool cellar. They may be kept for some time by placing them on the floor of a cool, damp cellar, and turning them occasionally.

There are several varieties adapted to field culture; among which the Drumheads have always been popular. When a portion of the crop is to be marketed, the Winningstadt is a most excellent variety. It is sugar loaf in form, tender and fine flavored. The Stone Mason Marblehead is large, solid, tender and heads freely. The Marblehead Mammoth is an excellent variety, and upon good soil will grow to an enormous size. Robinson's Champion is represented as the largest cabbage grown, even larger than the Marblehead Mammoth, and sometimes weighing 60 pounds, but we have no experience with this variety. It pays well to grow cabbages for stock feeding at the East, but at the West, where the soil is of easy culture, where grasses are not so luxuriant, and feed becomes dry and parched during the latter part of the season, it would

seem that the cabbage crop could be turned to good account for dairy stock.

Without attempting to give suggestions as to the special management of this crop, we may in brief refer to some of the leading points to be observed for success. Whatever varieties are selected, it is important that the plants be raised from good seed—seed that will give healthy plants; then a rich soil, deeply cultivated with an abundance of well rotted manures, and finally, thorough culture and keeping down weeds, will comprise the main features for a good crop.—*West'n Rural.*

Sulky Cultivators.

After another year's experience let us have a report of the results. How far have they proved satisfactory? Will they do to rely on as a single implement with which to cultivate a crop? Have they given satisfaction when used for putting in small grain?

I have, in former years, given my experience with them, and the opinion that they were not only reliable as a single implement, for the cultivation of corn, but that they were the best corn plough in use. I have used nothing else for the past six years, and have seen nothing the past year to change my opinion of their valuable qualities.

Last spring I put in some twenty-five acres of oats and spring wheat with one, and the result has been very satisfactory. My ground was ordinary corn-stalk ground. I used four shovels, straddling the row, the same as ploughing corn. I found it a little heavy for two small horses, and put on three, when they walked along with ease, ploughing up nicely from seven to eight acres per day. Some of the seed was sown before, and some after ploughing. I then harrowed it all the opposite way from what it was ploughed, which leveled down the stalks and ground, leaving a nice bottom for the reaper. I think the ground should have been rolled after harrowing this season.

If the ground is very cold, or wet, I should prefer ploughing first; but if it is in good order, perhaps sowing the seed first would be best, as there would then be little danger of covering the seed too deep to get up.

This is certainly a very speedy way of getting in a crop, which is usually an important item, as we frequently have but few days that the weather and ground are in a suitable condition for working. And taking advantage of these few days often decides between a good

crop and a total failure, as it did this season, when early sown grain was a fair crop, while much of the late sown was not worth cutting. By this plan a man can plough, sow and harrow some four acres per day.

This being my first trial, I can only say that it proved satisfactory, as I had a better crop of grain than any of my immediate neighbors, who put in their grain on similar ground, but by different modes.—*Cor. Prairie Farmer.*

The Neponset Hogs.

In the market report of your paper of Jan. 16th, it is stated that a lot of 160 hogs averaged 475 lbs.; also, that they were of the Neponset breed, and from the English settlement, Bureau county. As we do not know much of this breed, it would interest some of your subscribers to hear something more about them; also, the age, manner of feeding, etc., by which they obtained such extraordinary size.

Madison Co., Jan. 28.

F. CURTIS.

Believing that there were others who would like particulars concerning the large hogs that annually come to this market from Neponset, we sent the above inquiry to our old time patron, E. McIntire, Esq., of that neighborhood, for reply. He very kindly writes us as follows:

In answer to the inquiry made by Mr. Curtis, I will say that I presume that the Neponset breed of which he speaks, does not differ essentially from the breeds at Alton, or any other hog-raising part of Illinois. It is true that the farmers of Neponset have been taking great care in the way of improving, by breeding from their best sows, avoiding strictly in-and-in breeding. The three great leading varieties, Poland, Chester White and Berkshire, are generally kept there. But while it is important to have good blood, our farmers have long since learned that a hog won't grow without care and proper attention.

Neponset has become famous for sending big porkers to market and that, too, very justly. The lot spoken of by Mr. C. of 161 head, whose average weight was 475 lbs, were raised in this town and shipped from here by Messrs Buckle & Sharp. Also on the same day 600 hogs whose average weight was 395 lbs, were sent and sold in Chicago at \$11.75 and \$12.50 per 100 lbs. I am informed by Mr. H., that none of these hogs were more than 18 months old and many not that. The way we feed our hogs is by giving them a plenty while fattening. Good, pure water is essential, and a good place to sleep. Be sure to keep your young pigs growing right along.

Treatment of Orchards.

What treatment of the soil is best for an orchard, has long been a question among farmers and agricultural journals. The editor, in answer to a correspondent a few months ago, gave it as his opinion that a single crop of grain would not injure a young orchard, nor several crops if the land was well manured. This is certainly contrary to my experience, for I have often seen orchards cropped with grain, and know that a single crop of oats has retarded an orchard a year or more in its growth. Hereabouts, at least, theory and experience generally unite in condemning the practice of sowing any kind of grain in an orchard. Grain crops are the most exhausting that can be produced on any land, and must perforce rob an orchard of its food. Whether a young orchard should be allowed to lay in grass is a more difficult point to determine. The *Gardener's Monthly* advises seeding down an orchard to grass as soon as it is planted, and gives as it reasons that orchards thus treated are more healthy than those of which the soil is cultivated. It says that if the grass is kept down, while the trees are young, by mowing several times a year, nothing will be taken from the soil, while an occasional top-dressing will keep the trees growing finely. When they have attained to a good size, grown as near together as it recommends, they will keep down the grass for themselves. This plan has many things to recommend it, not the least of which is the small amount of labor required; but there are objections to it which, in some circumstances render it unadvisable. The old turf remaining undisturbed for years would be likely to become a refuge for insects and vermine of all kinds, and I can see no way to successfully combat these enemies without removing this sod, to do which would remove all the advantages claimed for an orchard in sod. There are many other plans recommended for the treatment of orchards which, doubtless, succeed well in particular localities, but I have lately noted two which I consider of almost universal application. The first is to keep a space around the tree as great as the spread of its branches loose and well mulched. Fork in an occasional dressing of manure as needed, and keep the remainder of the land in sod. The objection to this method is the amount of labor required to keep the soil beneath each tree mellow, but abundant

mulching might lessen this. The second plan is to set the trees from 30 to 40 feet apart cultivate the whole surface with squashes or like inexhaustive crops, and heavily mulch the whole area upon which the fruit falls with salt-hay during the summer. This is the plan practiced by Capt. George Pierce, of Arlington, Mass., the owner of the best orchard in the State. I would advise every person about to plant an orchard to adopt one or the other of these plans, of which the latter seems the most feasible, although it does not allow nearly as many trees per acre.—*Correspondence of the Rural American.*

Cotton and Woolen Waste as Manure.

The employment of cotton waste as manure is mentioned in *Eclectic Engineering* as having been used by M. Dupont-Poulet, a French cotton spinner. This gentleman states that by the mixing of cotton waste with stable manure, the burning and chills which manure alone often causes are avoided. Some of M. Dupont-Poulet's friends have gone beyond him, and one of them used cotton waste in the forcing of asparagus, by spreading a layer of eight inches thick over the asparagus beds, and found the experiment successful.

A very good manure is likewise formed from wool. According to the experiments of M. Hatchett some years ago, hair, feathers, and wool are only particular combinations of gelatine with a substance analogous to albumen; water can only dissolve them by means of fermentation, which takes place slowly, and after a long time. The owner of some land in Montpellier, a manufacturer of blankets at one time, caused the sweepings of his workshops to be spread over his land, and the harvests of corn and fodder which it produced were astonishing. It is well known, that the hairs of wool transpire a fluid which hardens upon their surface, but which possesses the property of being easily soluble in water. This substance has received the name of animal sweat; the water in which wool has been washed contains so much of it, as to make it a very valuable manure. Animal sweat is a soapy substance, consisting of a base of potash, with an excess of oily matter, and containing, besides some acetate of potash, a little of the carbonate and of the muriate of the same base, and a scented animal matter. The Genoese collect with care, all they can find of shreds and rags of woollen fabrics, to place at the foot of their olive trees.

The American Farmer.

Baltimore, May 1, 1869.

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BALTIMORE.

Emigration.—The International Emigrant Union, an association of some of our best citizens, of which Governor Bowie is President, has inaugurated a mission of very great promise to the State, in the appointment of an agent to reside in Germany, whose business it will be to distribute such information among the better class of the German population as may induce emigration in this direction. Dr. Reidenbach, the General European Agent, sailed on the 3d of April in the North German Lloyd Steamship "Ohio." His head-quarters will be Stuttgart, and auxiliary offices will be established, at once, at Bremen, Hamburg, Berlin, Leipzig, Dresden, Frankfort, and other principal points.

The agent is said to have the highest qualifications for his duties, and we anticipate from his services the best results.

The Uses of Sumac.—We are willing to go to the ends of the earth for whatever will add to our stock of profitable products. Let us the more cheerfully welcome into good society, what has been esteemed an outcast, when we find that only our ignorance of its value has consigned it to that position. The Sumac, as it has grown in hedge rows and fence corners, has always afforded a meagre return when gathered for dyeing purposes. Why may it not be planted and cared for and made profitable both for dye and the wine which is now manufactured from what have been heretofore thought the poisonous berries.

Professor Mallet's Talk with the Farmers of Albemarle.—The extract from this address, as we find it reported in the *Richmond Whig*, will be read with interest by all who are concerned with fertilizers and the elements of crops. Our correspondent of last month who made inquiry as to the proportion of the several mineral elements of our principal crops, will find here a satisfactory reply.

It is gratifying to find that this venerable seat of learning, the old University of Virginia, is up with the spirit of the times in attention to the development and diffusion of agricultural science. There were present at this meeting our long-time friend, Dr. John R. Woods, W. W. Gilmor, Thomas and James Bowen, S. W. Ficklin, R. W. N. Noland, W. Southall, Woods and Edgar Garth, Col. T. J. Randolph and Col. Frank G. Ruffin, with a large number of the farmers of the county.

Just fifty years ago, Ex-President Madison was elected President of the Albemarle Agricultural Society, Th. M. Randolph and James Barbour, Vice-Presidents, John Coles, Treasurer, Peter Minor, Secretary, and Th. W. Maury, Assistant Secretary. We find on page 273 of first volume of the *American Farmer*, a letter from Mr. Minor to the editor, saying, "The Society came to the resolution of making the *American Farmer* the medium of communicating its transactions to the public."

Sewage Manure.—Professor Campbell Moffit, a well known Baltimore chemist, who has been for some years residing in London, has kindly forwarded to us the article entitled "Camp Sewage Manure Farm," &c. It will be read with interest by every one whose attention has been called to the very important matter of economising and using the valuable fertilizing material which is so lamentably lost to agriculture, in our cities, villages, and wherever a number of people are gathered together.

Improvement of Land by Sheep.—The little article on another page with this heading is suggestive. It is not easy to see how sheep can improve poor land, when they consume only what that land produces, but they are good cleansers, biting and bruising every nuisance that finds place on old pasture ground. If, moreover, there be given with what pasture they have, corn or oil-cake, we may be sure of great benefit from their manure and their cropping combined.

The Railroads.

In the monthly report of J. W. Garrett, Esq., President of the Baltimore and Ohio Railroad, he has the following as to the Southern connections of that road through Virginia:

"There are two subjects in connection with railway improvements of vital importance to this community, which will be presented at an early day, in a manner that will attract great public attention. The aid of the Baltimore and Ohio Company to the Winchester and Strasburg road will effect the opening of the line to Harrisonburg during the next autumn. There will then be a gap of about 118 miles from Harrisonburg to Salem—the construction of which will not only open the business of the magnificent Valley of Virginia, but also open, under the most favorable auspices and influences, a great line to New Orleans, which will largely command the traffic of the vast intermediate territory.

A second gap, of but sixty miles, exists between Lynchburg and Danville, the filling of which will connect the Orange and Alexandria road with another highly important system of Southern railways, by which an enormous business will necessarily be directed to Baltimore which now goes to the coast. The leading citizens in those sections are extremely anxious to get these roads constructed. They want, in view of the advantages to their regions, enlarged commercial intercourse with Baltimore. They are willing to contribute largely for the work themselves. The counties upon the Valley line propose to subscribe \$1,200,000. They propose to ask the city of Baltimore to subscribe a million to their stock.

The Lynchburg and Danville interests propose to supply all that will be requisite but half a million. This sum they wish to obtain from the city of Baltimore. Under these circumstances large delegations of the most eminent citizens in Virginia—Messrs. Harman, Barbour, Baldwin, Pendleton, Stuart and General Robert E. Lee, and others of equal prominence and influence—it is expected will visit Baltimore about the 21st of this month to confer with the authorities and citizens of Baltimore. It will be seen, as a mere railroad question, that the Baltimore and Ohio Company has but little interest in these extensions, whilst incalculable benefits would result from their construction to the business interests of Baltimore. As this company is now engaged

in enterprises for the prosecution of which all its resources are required, those connected with it can only aid as citizens, and co-operate to secure the requisite capital. It has been found heretofore impossible to obtain the large sums necessary for such works from individuals. Therefore the only practicable plan appears to be for the city to render the necessary assistance. It is the judgment of many who have carefully considered the subject that if the city of Baltimore can, by subscribing \$1,000,000 to the Valley line and \$500,000 to the Lynchburg and Danville line, secure their construction, and thus open these direct and first-class avenues to Baltimore, that this community will absolutely gain in advantage and net profits on the vast business that will be thus commanded not less than the aggregate amount (\$1,500,000) in each and every year after their completion. In that judgment the chair fully accords."

Gen. Lee and other gentlemen spoken of, have conferred with the Baltimore city authorities, as anticipated by Mr. Garrett, with what result is yet to be seen. There are some Virginians, it will be seen, who are not so determined to "head off" Baltimore as our Richmond contemporaries have occasionally seemed to be, nor do they resent the invasion of the sacred soil of the old State by her peace-making railroad enterprises.

Gov. Bowie asks permission to enter the city with the Potomac Railroad, and reminds the authorities that this is the only railroad company making connection with the city, that has asked from her no money help.

Carbolic Acid.

Dr. Samuel Kneeland, Fellow of the American Academy of Arts and Sciences, says in his editorial preface to the "Annual of Scientific Discovery for 1869":

"The fungoid origin of most, if not all contagious, epidemic and malignant diseases, affecting both man and animals, and frequently transmitted by animals to man, is generally accepted by physiologists.

"Earth, air and water teem with the germs of fungi, in the great part originating in human excreta, and gaining admission into the animal body through food, drink and breath. To prevent the vivification of these germs in the living body, both in medicine and surgery, carbolic acid is the best substance yet discovered."

Sorrel and Sour Soils.—In the able paper of Dr. Stewart, which we copy from the Farmer's Gazette, he says: "The false and vulgar notion so generally quoted in our agricultural papers is discarded, viz: the idea that 'the soil is sour,' and therefore requires lime." It is near fifteen years ago that we first attempted to have this "false notion" discarded, and presented such facts in support of our opinion as compelled attention, and led to a reconsideration of the subject, as we know, by many thoughtful and intelligent men. We are glad to have the concurrence of such authority as Dr. Stewart's, based on scientific investigations, and confirming our judgment in every point.

His suggestion of "frequent stirring of the soil to admit air," is in exact accordance with our recommendations, authorized by a careful observation of facts, that a certain cure for tendency to grow sorrel, was draining, ploughing, or whatever operation was necessary to put the soil in that wholesome condition, which best fitted it to produce our cultivated crops.

The Sulky Cultivator.—We gave last month a short article from a correspondent and another now, on the Sulky Cultivator, speaking very favorably of it. On the contrary, we have read an article in a Western paper which indicates that the work done by these implements is generally imperfect, and likely to leave the ground greatly infested with weeds. Our own impression on the whole is, that on fair ground, free from impediments of every sort, and in careful hands, the implement is a valuable one.

Broom-Corn and Sorghum.—We give a good article on broom-corn on another page.—Broom-corn and sorghum are so closely allied, the modes of cultivation are almost identical. The high and increasing price of sugar and molasses, will give an impetus to sorghum growing. Let it be borne in mind that the two should not be grown near together if the seed are to be kept pure. The effect of plaster on these crops is worthy to be noted.

Agricultural Fair.—At a late meeting of the board of directors of the Carroll County (Md.) Agricultural Society, it was resolved that the first fair be held on Tuesday, Wednesday, Thursday and Friday, the 28th, 29th, and 30th of September, and the 1st of October.

Mr. Francis H. Smith's Vegetable and Fruit Dryer.—Mr. Smith has left at our office specimens of sweet and Irish potatoes dried by his process, with the water entirely expelled, and others brought back to their original state by soaking in water. They indicate a perfect state of preservation, and as thorough drying as we find in dried apples, and thorough restoration to their former condition. We hope to see Mr. Smith's method brought into common use, and anticipate from it results of great value.

Barland's Cow-Milking Tubes.—We have received from Wm. H. Crocker, 9 India street, Boston, a set of these tubes for trial. It is an ingenious and simple device to bring down the milk into the pail, without the labour of the common process. If we find it to answer the promises made in its behalf, shall notice again.

Big Hogs.—The statement of weights of hogs sent to Chicago from Neponset, Illinois, exceeds, when we take account of the number, anything that we have heard of before.

Excelsior Oats.—Col. Capron, the obliging chief of the Agricultural Department at Washington, has sent us a package containing four quarts of Excelsior Oats for experiment.

Vegetable Seeds.—Mr. Wm. H. Lyman, Seedman, Leverett, Massachusetts, has favored us with a package containing a very considerable variety of selected vegetable seeds.

A Large Hog.

Messrs. Worthington & Lewis:

GENTLEMEN: In reading the April number of the *American Farmer*, I see you have given the weights of a number of large hogs, &c. I must say to you, I am the owner of a hog skin, stuffed, which came off of a hog much larger than any you have mentioned. The hog was raised by Dea. Lorenzo Brown, of Vernon, Vt.; a sow, and had two litters of pigs; was two years and three months old; I bought her and had her skinned, and paid him for the remaining part, 1081½ lbs. dressed weight. She was the Chester county breed. That seems to reach a pretty heavy hog.

Yours, Ross & Co.

Northfield, Mass., April 6, 1869.

Notices.

The Inventors' and Manufacturers' Gazette.—This paper contains a great deal of information in regard to inventions and manufactures, that is likely to be of interest to the public. Wood cuts illustrate its pages profusely, and it is very neatly printed.

Geological Survey of New Jersey.—We are under great obligations to Dr. George H. Cook, New Brunswick, N. Jersey, for a volume with accompanying maps, containing the results of a geological survey of his State, which has been conducted under his able supervision. It is a work of the greatest value to New Jersey, and offers a most worthy example to our own and other States.

A Guide to the Study of Insects, and a Treatise on those Injurious and Beneficial to Crops. For the use of Colleges, Farm Schools and Agriculturists. By A. S. Packard, Jr., M. D., Salem, Massachusetts. We have part No. VI of this valuable publication.

Report of Surveys Across the Continent in 1867-68 on the thirty-fifth and thirty-second Parallels, for a Route extending the Kansas Pacific Railway to the Pacific Ocean at San Diego and San Francisco, by Gen. Wm. J. Palmer. Philadelphia: W. B. Selheimer, publisher, corner of Fifth and Chesnut streets.

This report, besides its value to those directly interested in the specific object of the survey, is very full of interest to all who care to increase their knowledge of the great unoccupied and unknown region through which a large portion of the survey was made.

The Southern Review.—We look with ever growing interest for each new issue of this very able Review, and read it with always increasing satisfaction. The contents of the April issue are: What is Liberty? Recent Researches in Geography. Women Artists. The Legal Profession. Positivism in England. The Atmosphere and the Ocean.—American and English Law. The Battle of Gettysburg. The Sun. Alcione; a Poem. Notices of Books. A. T. Bledsoe, Baltimore.

Catalogue of the University of Virginia.—We are indebted to our friend, Dr. John R. Woods, a member of the Board of Visitors for Albemarle county, for this Catalogue.

The New Eclectic Magazine.—We are in receipt of the May number of this magazine, being the combination of the "Eclectic" and "Land We Love." The address of the consolidated magazine is, The New Eclectic Magazine, 54 Lexington street, Baltimore, and its publishers are Turnbull & Murdoch, to whom all correspondence relative to the magazine must be addressed, and to whose order all drafts must be made payable. Gen. Hill's address is Charlotte, N. C.

The New Eclectic, valuable as it is well known to be by all who have seen it, has increased interest given it by the Haversack of the Land We Love. We heartily commend it to the good offices of all lovers of literature.

The Home Monthly.—This handsome Southern magazine, published at Nashville, is received, with its usual amount of entertaining and instructive matter.

DeBow's Review.—This well known and able monthly, devoted to agricultural, commercial and industrial progress and resources, comes freighted, as usual, with solid matter.

Demorest's Monthly.—This is the lady's magazine of the times, and is fully appreciated, we believe, by those whom it designs to serve. We judge so by the interest which its elegant illustrations of fashion always excite in our circle. These alone must be worth the subscription, and the quantity of entertaining literary matter comes free of charge. Price \$3. W. J. Demorest, 838 Broadway.

The "Young America," from the same, is of like interest to the younger ones.

The Little Corporal is another of these very useful and ably conducted juvenile journals that the young ones are always happy to get hold of. Price \$1. Alfred Sewell & Co., Chicago.

Mayne Reid's Magazine, Onward.—The May number is already at hand. *For the Youth of America.* Handsomely illustrated. Carleton, publisher, N. York.

Catalogues.—We have handsomely illustrated Catalogues from Ellwanger & Barry, Rochester; from the Syracuse Nurseries, Smith, Clark & Powell, and from Ferre, Batchelder & Co., Springfield, Mass. Also Catalogue from John Feast & Sons.

We have received the *Report of the Principal of the State Normal School*, showing the condition of the Public Schools of Maryland, with the reports of the County School Commissioners, for the year ending September 30, 1868. Annapolis, Geo. Colton, printer, 1869.

Report of the New Jersey State College, for the benefit of Agriculture and the Mechanic Arts, and the Annual Lecture, for 1868.

Draining.—A subscriber at Macon, Ga., who asks for an article on draining, will be answered next month.

Maryland Agricultural College.—A meeting of the stockholders of the Maryland Agricultural College was held at noon April 21st at Guy's Monument House. Otho H. Williams, Esq., was called to the chair, and F. A. G. Handy appointed secretary. On the call of the roll it was found that a quorum of the stock was represented. On motion of Mr. Charles B. Calvert, of Prince George's, the meeting proceeded to an election of seven trustees, and the following gentlemen were elected: Edward Lloyd, of Talbot; James T. Earle, of Queen Anne's; J. Carroll Walsh, of Harford; A. Bowie Davis, of Montgomery; Dr. Eli J. Henkle, of Anne Arundel; Allen P. Dodge, of Washington, D. C., and Charles B. Calvert, of Prince George's. The business having been accomplished for which the stockholders were called together, the meeting adjourned.—*Gazette*.

State Agricultural and Mechanical Association—*Visit to Pimlico.*—On Tuesday afternoon the committee appointed to improve the grounds of the Association at Pimlico, consisting of Messrs. William Devries, Governor Bowie, John Merryman, William H. Jillard and Jos. H. Riegan, made a visit to that place to take the initiatory steps of the business confided to them. Mr. Charles Wheatley, Secretary of the American Jockey Club, and general manager of the Jerome and Saratoga race tracks, accompanied the committee, having been invited from New York for that purpose. General Ellicott and E. Law Rogers, Esq., were also present. The property was thoroughly examined, and the locations of the buildings and track were determined upon. The track will be oblong in form, each side stretch to be one-quarter of a mile, and each turn of the

same length, that being the most approved plan for a track for speed. After an examination of the ground, Mr. Wheatley estimated that Pimlico can be made equal to any grounds in the country, for the purposes of the Association, at an outlay of about seventy-five thousand dollars. The committee have not the means at their disposal, and look to the citizens of Baltimore to come forward at once, and by liberal subscriptions justify them in taking the necessary steps to improve the property. The first exhibition of the Association will be held during the last week of October next, and no time can be lost to have the improvements made in season.—*Sun*.

Gen. Ellicott has been appointed engineer and architect, and will proceed at once to make the necessary designs for the improvement of the grounds.

Harrowing Corn When Full Six Inches High.

G. W. Minier says this should be done with the best harrow you can get. I harrow until the corn is well up—but never yet have ventured this plan. If it can be done without uprooting or breaking the tender plants it must add bushels per acre in yield—for with this method the corn row can with little difficulty be cleared perfectly of weeds and kept so.

I suppose the corn should be planted a good depth so as not to be uprooted by the harrow. I wonder if Adam Rankin would permit the Scotch Diamond harrow to run over his premium corn when 6 inches high? If so, give me the drill every time, for I can thus master the weeds and grow four stalks where only three used to grow, and save the time and labor of marking, and finishing, planting when the last furrow is ploughed—which sometimes might be of importance "as rain may be expected about these days."

I have heard of Mr. Minier's plan before, but never yet saw it practiced.

The best method of cultivating corn I saw last season, I think was the two horse walking corn plough for the first time through, and perhaps the second time, after which the 4 bladed scraper or gopher, (so-called); yet I saw good results where either was used exclusively. The wheel or riding cultivators were tried and set aside.

Good, sound, plump seed should in all cases be used and no guess work. A second planting does not amount to much—and farming at the halves does not pay as well.—*Prairie Farmer*.

Agricultural Journals.

PHILADELPHIA, 4th mo. 10, 1869.

Editor of American Farmer:

DEAR SIR: In your list of agricultural publications, in your April number, you have omitted the following (one of the very best in the country): The Maine Farmer, published at Augusta, Me.; also, the Hawkeye Farmer, just started at Sigourney, Iowa; the Turf, Field and Farm, of New York City, devoted to the interests of the farmers' good friend, the horse; the Farm Journal of Mr. Deitz of Chambersburg, Pa., and the Journal of the Farm, at Philadelphia, both devoted to the specialties of their publishers, but full of good matter as well; the Farm and Garden, at Clinton, S. C.; the Farmers' Home Journal, at Lexington, Ky.; M. W. Phillips' live monthly, the Southern Farmer, Memphis, Tenn., and the California Farmer, at San Francisco. There are also several other omissions, I think, but I cannot now recall the papers. I think the Utica Herald deserves as well to be called an agricultural paper as one or two named in your list.

Such an array of sterling agricultural publications, so well patronized, speaks in the highest terms for the intelligence and enterprise of our farmers, and gives hope of great improvement in the future. Among these various magazines none presents a better appearance, externally and internally, than the *American Farmer*.

When farmers, as a class, are willing to read and profit by the experiences of others, then, and not till then, will agriculture be lifted to the position of an honorable, intelligent and profitable employment.

I am, with great respect,

Yours, very truly,

CHARLES W. DICKERMAN.

Mr. Dickerman has our thanks for these corrections. We must make the apology to such of our exchanges as were omitted from our list, by stating that it went accidentally to the printer without the correction we designed to give it. We had taken the list printed by a contemporary, which omitting even our own name, we saw at once was very imperfect. We made a few amendments with the pencil, intending to give it a careful revision by our own exchange list, but failed by an oversight to do so.

We cordially endorse the remarks as to the

Utica Herald, and the more, because of a very recent kindly notice of the *Farmer*. It, and Forney's Weekly Press, we class with that staunch old weekly, the *Germantown Telegraph*, whose first and last pages, its literary and agricultural departments, are always admirable; making a fair show outside, while within it is full, of—"dead men's bones," shall we say, or—very profane politics? But this is none of our business. In agricultural matters, we hold the *Telegraph*, *Herald* and *Press*, as "men and brothers."—*Ed. Farmer*.

Sorghum Sugar.

We have received from Mr. Wm. F. Beasley, of Greensboro', N. C., through Major Jas. Sloan, of the same place, a specimen of sugar made from sorghum, and along with it a pamphlet relating to the process of manufacture and its cost. The sugar is a very fine sample and good enough for anybody, being equal in color, brightness and sweetness to the best refined "A" sugar. Mr. Beasley says: "Of the certainty of this process, none need have any doubts, for it has undergone the most thorough investigation and surmounted the most skeptical doubts." He recommends the use of new seed of the "Black Imphee"—that in common use being mostly impure—and says an acre will yield five hundred pounds sugar, fifty gallons syrup and twenty-five bushels seed. At half these figures, it would be a very profitable crop. The sugar made by this process costs from five to eight cents per pound, and syrup from twenty-five to thirty cents per gallon.

The necessary machinery is plain and simple, and can be made at any foundry. It consists of

Two-horse mill, cost.....	\$100
Three evaporators.....	80
Bricks for furnaces.....	30
Skimmers, &c.....	30
	\$200

This machinery is sufficient for forty acres of cane, and will last ten years. New seed can be obtained from James Sloan & Sons, Greensboro', at twenty-five cents a pound—four pounds necessary to plant an acre. Wm. F. Beasley is sole agent for sale of rights in North Carolina, Captain Thomas S. Preston, of Lynchburg, sole agent for Virginia.

This process, if it be as represented, and we hope it is, will produce a vast effect upon the well-being of the Southern States. We do

not know the amount of money expended in Virginia annually in sugar and molasses, but we suppose it does not fall short of two millions of dollars, probably it exceeds three millions. This money all leaves the country, and is a total loss. By producing our own sugar, it would be saved, and we incline to the opinion that the labor necessary for this production would not greatly interfere with or materially diminish our present staples.—*Richmond Whig.*

Diseases of the Pig.

Measely Pork—Tape Worm in Man and the Dog—Hydatids in Sheep.

At the close of the last lecture which I delivered before the Farmers' Club, over the Farmers' Market, in this city, much surprise was manifested when I traced measely pork as the cause of the production of solitary tape worm, with joints, that is found in man, and the tape worm with serations as found in the dog, together with the joints from the latter variety of the parasite distributed over the grass of the field and eaten with it, producing turnsick gid, etc., in sheep, and sometimes of cattle also.

The *Cysticercus*, then, is a parasite found in the watery eruptions on the skin of the hog, and if this measely pork be not sufficiently cooked to destroy their vitality, when eaten, it will produce tape worm in either man or dog, with the difference in appearance as above mentioned. The *Tenia solium*—the *Tenia seratum* of the dog, rarely ever come from the body whole, if it be alive, but in joints (serations,) which contain the organs of generation on one side of each articulation; and it is the kind of worm mostly found in the United States and in Great Britain, in which the sexual organs are found on the flat side of the link of these worms. The perfect ova of this portion of the worm, when swallowed or eaten with the food of sheep and the ox, produces an encysted parasitic disease on the brain, immediately under the base of the horn, and *conversely* when again eaten by the dog, will in this form produce tape worm.

The name of the disease produced in the brain of the sheep and the ox is called by scientific men, hydatides, and are occasionally found in the liver of man. A very fine specimen of them can be seen in the collection of Dr. Wood, in the University of Pennsylvania, as inhabiting the liver of man.—*R. McClure, V. S., in Practical Farmer.*

Improvement of Land by Sheep.

Mr. H. G. Abbott, of North Vassalboro, Me., concludes a communication in the *Maine Farmer* on sheep raising with the following statement, which was made in corroboration of his opinion that there is as good encouragement for farmers to increase their flock of sheep as any other kind of farm stock; and that if farmers would keep their sheep on their tillage land they would improve it to almost the amount of the expense of keeping the sheep the year round.

I made an experiment in this direction four years since, that satisfied me on this point. I will state the same, hoping it may be the means of inducing some to try it also.

I had a grass field of about thirty acres, smooth and free from stumps and stones, sloping gently to the west, and of clay loam soil. One end of the field was so completely run out, that nothing but white and yellow-weed was to be seen on the field. Not having barn manure sufficient to dress what I had up, and this field in addition, I concluded to turn out ten acres of the poor end to pasture and after pasturing it two or three years to take it up and dress it and put it into grass. Accordingly I run a cheap board fence across the field inclosing ten acres, and put on to the piece fifty sheep, without lambs, and kept them there two seasons. They fed it close to the ground, not allowing a blade of anything to get over an inch high.

In the spring of the second season I perceived a greenness on the field, looking different from what it had for a few years past, and was led to examine the same, and to my surprise. I found that there was a sprinkling of grass coming up over the field. I put fifty sheep on the second year, and noticed through the season, that the sprinkling of grass increased; so much so, that I called the attention of one of my neighbors to the fact. His reply was that he had been noticing it for some time.

The next spring, at the usual time of turning out sheep to grass this piece looked so well, that I concluded to let it come up and mow it. Accordingly I took up the fence, and when I came to put on my mowing machine and hand scythes, to the surprise of myself and my men, I had the heaviest piece of grass on my farm—estimated by good judges who helped cut it, to be two tons to the acre, and some parts two and one-half tons, and of the

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very best quality, and with hardly a stalk of white-weed or yellow-weed to be seen. I cut the same piece last season, with about the same results.

I will state that I put upon the field about two bushels of plaster to the acre, and a very small amount of grass seed. I also went over the whole thirty acres in the same field, but found no such results. I could see from the road all the season, to an inch, where the fence was taken up. I will not undertake here to go into the figures showing the advantage of this manner of treatment for worn out land, but I do believe that I cut as much hay the two years past from the piece of ground from the effect of sheep running on it, as I should from a dressing of yard manure—and the expense of ploughing and fitting, and the application of the manure must have been quite an item—whereas the dressing from the sheep and the application of the same did not cost anything; for sheep are generally pastured on land that we cannot cultivate.

One suggestion, more, and that is the importance of going over our grass fields in the spring of the year and scattering on a sprinkling of grass seed. Nothing of such light expense pays so well.—*New England Farmer.*

The Horse Growers.

Going into Orange county, N. Y., you find on every hundred acres a neat and capacious white house, with well-kept fences, a few rose-bushes, a convenient garden, ample barns. Inside these houses you will be apt to find a wholesome, handsome woman and four good children—that is the average. If this woman does not know what good butter is, and how to make it, good bread and how to make it; if she does not know a good horse or cow when she sees it, a good farmer as soon as she puts her eyes on his land, it will be surprising. If every woman in every house does not own and wear a good silk dress, if there is not in every house a newspaper or two, and a magazine or two, and twenty good books, it will be more surprising still. These houses are furnished with good carpets and good beds, and in many of them stands a piano which some daughter can use passably well. On Sundays and on fair-days, these men and women and children have a good carriage and a horse or two, with which they can ride.

They are as well off as mankind can be, and they ought to be content.

For myself, I should like to see introduced here the English fashion of fortnightly market days, where, at the central town on a particular day, buyers and sellers should meet, the one with productions the other with money, for mutual exchange. I believe this would promote and satisfy the social feeling, which now may sometimes go hungry; and I am sure it would be peculiarly beneficial. Five good farmers can start it in any district, and I trust they will in Orange county. The principal products of this rich county are butter, cheese, milk, cattle, hay, and horses. It is with the last that we have to do. Three great stud farms are to be seen there; and, besides these good horses, in ones and twos, are bred on nearly every farm. This, indeed, has been the usual method until within a few years, when capital, brains, and experience combined, have organized great businesses, as to which I only propose to report progress.

On these great farms are to be seen, running loose on the snow-covered fields, herds of yearlings and two-year-olds, rough, unlicked, long-haired. It is not easy for the uninitiated to believe that some of these unkempt creatures are worth more than a thousand dollars as they stand. But, with singular confidence, they come up to you, they put their noses into your hand, they wish to nip at your coat, they have no other idea than that you are their friend. Then you begin to see that they have broad faces, great, intelligent eyes, quick, flexible ears, and confidence. You are pointed to the depth of chest, which indicates long power and large hearts. You see that they are even more strongly developed behind, where the great propelling power of the trotter lies. You see, too, that the stifles are wide, and that the muscles creep well down toward the hock joint, which is low on the leg. Very soon you begin to believe that these uncombed, wild looking, but gentle colts are indeed, worth money, and that they are the stock from which is to be developed the gentleman's road horse of Eastern America in the coming time. You go into the open yards and find, in groups of five or six, the brood-mares, as rough-looking, as unpromising as their children; but you learn that most of them have racing blood in their veins—are descendants of Mambrino, or Abdallah, or Clay, or Star, or some other of the noted horses; and nearly all have made their mark, have done their mile in 2.50, 2.40, or 2.30, and so have won their places as mothers of noted offspring.—*March Galaxy.*

From the Farmer's Gazette.

Sorrel—The Philosophy of Its Cause and Cure.

The seed of all weeds seem to be ubiquitous, and it is said that white clover will appear wherever wood ashes are applied, although the soil is thrown out of the bottom of a well. If these propositions are admitted, another may be easily sustained as self-evident, viz., that the only reason why any one plant grows exclusively in, that the soil, climate, atmosphere, and cultivation happen to suit it better than other plants.

In some locations on the Eastern shore of Maryland, if the soil is ploughed at a certain period in the spring, white clover will spontaneously cover the ground; otherwise, "woolly head," and after that crab grass. In the first case the cultivation determined the germination of the seed, which would otherwise lie dormant for years. In the second the climate determined the germination without regard to cultivation. But in proportion as grasses are nutritious they demand all of the conditions, viz., climate, or the proper season; cultivation, or the preparation of the soil mechanically, and also a due proportion of all the elements of soil, air and plant food also, or some substitute therefor, as lime for the soil, and ammonia for the air elements. If the plant must be compelled to struggle for life under any incubus of the kind, it is like a man with tubercles in his lungs, who wants all his nervous energies to sustain his vital powers; consequently, we save his stomach the trouble of digesting food by giving him cod liver oil, or fat that is already assimilated.

Cotton and oranges can be grown in Maryland or Virginia, but they require one of these elements to be supplied artificially, viz., climate; and their struggle for life, with indigenous weeds, would make their cultivation unprofitable. So also it is when any other element is deficient slightly, as Solomon says, "when the axe is dull—more labor is required." If some element of soil or plant food is absent or deficient, or in great excess, in either case some weed chooses that spot, as its speciality, to the exclusion of all other plants, and apparently in spite of fate. Now this is precisely the case under consideration.

Reasoning from the composition of sorrel [viz., its proximate principle or educt, not its product, but the element, which it produces, spontaneously, when it assimilates its atmos-

pheric plant food, or breathes and appropriates the elements of the air.] we should conclude that the speciality of sorrel was an atmosphere or soil deficient, either positively or relatively, in oxygen; in other words, yielding carbonic oxide instead of carbonic acid, which latter is the atmospheric plant food of all other plants. Sorrel uses carbon, as well as other plants, and gets it in the same way; but sorrel can breathe and assimilate or appropriate the poisonous oxide of carbon. The beautiful blue flame over the back part of a wood or coal fire, when burning freely with the stove door shut, is carbonic oxide, the same poisonous gas, which came near extinguishing the life of Julius Cæsar when he visited France, and warmed his chamber with a chafing dish. When it occurs in the *wood* fire, it is because of an excess of carbon in proportion to the supply of air or oxygen, whereas over the *coal* fire, it may proceed from a deficiency of oxygen, resulting from the presence of sulphur or hydrogen, which rob the air and leave the carbon a short allowance, from their superior affinity therefor under circumstances; which to a *superficial* observer mean the same thing because the result is the same. Some plants, like certain animals, are amphibious or live like a toad, with less oxygen than other plants. The botanical name of sorrel is *oxalis*, and the acid of sorrel is oxalic acid, which is the same as carbonic acid, except that the former contains less oxygen, the proportion being two of carbon and three of oxygen in one case, and one to two in the other; consequently, when we want carbonic oxide, we treat oxalate of potash with sulphuric acid, whereas carbonate of potash or soda would yield carbonic acid if thus treated. Having tested the matter by analysis, we now proceed to synthesis, and discover that the circumstances under which oxalic acid is made artificially are precisely the same, viz., drop a particle of sugar into nitric acid and it is *fully* oxidised and carbonic acid escapes; whereas, if a particle of nitric acid is dropped into *sugar in excess* then *oxalic* acid is formed; again, if our theory is correct, we should expect sorrel to appear around and on the top of old stumps, where carbon is in excess and oxygen relatively deficient in the soil and air; also on the mud, thrown from ditches, that is blue or deficient in oxygen, not only as above, but contains protoxide of iron, which robs the soil of oxygen constantly, until it loses its color, and

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becomes yellow (or hydrated) sesquioxide or red (anhydrous) sesquioxide of iron. Again we should expect to find sorrel, where the subsoil is wet, and consequently the soil is not properly aerated or oxidized; also on the sides of marl pits and lime heaps, where pyrites or sulphuret of iron or sulphide of lime or any other powerful consumer of oxygen starves all other plants.

The philosophy of its cure is so apparent with this view of its cause, that the enumeration of the various modes is hardly necessary, especially as circumstances may indicate other modes of cure if the evil is comprehended, and the false and ridiculously vulgar notion so generally quoted in our agricultural papers is discarded, viz., the idea that "the soil is sour," and therefore requires lime, whereas lime actually makes it sour, or rather converts the carbon into carbonic acid more rapidly. The superficial combustion of straw on the ploughed surface, when dry, may be more economical, together with frequent stirring of the soil to admit the air, and more perfect drainage or cultivation in lands, which if small and doubly backed up or ploughed twice, will increase the crop of nutritious plants greatly beyond the product of the whole area, because every plant has seven times the chance with the same cultivation and manure, that would otherwise be spread on the surface drains. Subsequently, at the next cultivation, two of these lands can be thrown into one, and thus gradually and most economically surface drainage may be perfected, but these should always be East and West if possible. This is very important, for manifest reasons, as indicated in an article on the improved cultivation of wheat published in a recent number of this journal and the Rural American.

DAVID STEWART, M. D.

Port Penn, Delaware.

A Home-Made Fertilizer.

MR. EDITOR: Just before the beginning of the war, while I was farming on a small scale, I tested a combination of fertilizers, which gave most satisfactory results. The application was made to a corn crop in two consecutive years. During the second year it was also applied to a clover lot, with far greater benefit than resulted from a mixture of ashes and plaster alone, applied on a portion of the same lot and in equal quantity.

The ingredients were ground bones, (raw bone phosphate,) plaster, ashes and salt in the following proportions:

Finely ground bones.....	200 lbs.
Ground plaster.....	100 "
Leached ashes.....	*350 "
Common salt.....	50 "
Total.....	700 "

This mixture was applied to two acres, and dropped in the hill with the corn.

This compost contains not only all the mineral substances demanded by an ordinary grain crop, but the 200 lbs. of bone dust contains at least 50 lbs. of organic material, which by its decay in the soil yields ammonia or some form of nitrogenized matter favorable to the rapid growth of the crop.

Let us now examine into the cost. The ashes may generally be collected on farms, and sheltered until wanted for use, at the cost of a little care and labor; or about towns, where wood is used for fuel, at a trifling cost in money. The other ingredients would cost in Richmond:

200 lbs. ground bones.....	\$5 50
100 " " plaster.....	50 "
50 " salt (inferior).....	50 "
Total.....	\$6 50

Or at the rate of less than \$20 per ton, leaving out the cost of the ashes.

On very light soils, the addition of 100 lbs. of Peruvian Guano to the above compost, would doubtless improve it. The quantity would then be sufficient for two acres and a half. But even with this addition, the cost would still fall far below that of many fertilizers now in use, and which contain less variety and a smaller proportion of real plant food.

This preparation, if slightly moistened and then sifted, could be very conveniently applied to corn by means of the guano attachment of any good corn-planter; or dropped in the hill by hand without sifting. In either case, however, the ingredients should all be spread upon a floor, and if very dry, should be moistened and then thoroughly mixed.

I think any farmer who will make a trial of this combination of fertilizers will have no cause to regret it. And he can certainly save the heavy profits laid upon most of our manipulated manures, and the high charges usually added for their preparation.—J. L. Campbell, in *Planter and Farmer*.

*Or unleached ashes half the quantity would be sufficient.

The Late Poultry Show.

Notes on Exhibition of the New York State Poultry Society.

The Empire State leads the van in poultry shows, as in others. The late show was not only the *largest* and *finest* ever held in the United States, but on this continent.

The entries numbered something over one thousand, comprising all the well known varieties of fowls and pigeons, and many new ones. Quite a fine collection of dogs was also shown, from the enormous Siberian bloodhound to the petted black and tan of eight to ten pounds. A few ponies were also shown, and a splendid collection of mounted birds, beasts, fishes and insects.

A great deal of attention was paid to an *incubator* or *hatching machine*, shown by Dr. Preterre of 159 Bowery, N. Y. Chickens were being brought forth at *all* hours. An electrical arrangement was shown in connection with it, which rang a bell when the heat got too high, and also when it got too low. Another bell was rung when a chicken was hatched, calling the attendant to his duty. With this attachment the heat can always be kept at the proper degree, and success is certain. The only objection we can see to it is that only the few can use it. Although perfectly practical to an electrician or to a scientific man, not one farmer or poultry fancier in a thousand could manage or regulate it. The bell used in connection with it is seemingly a simple thing, but when disarranged, from whatever cause, it is not only a tedious, but a difficult, task to set it right. Dr. P., who is a thorough electrician and a man of considerable scientific attainments, has spent a great deal of time, study and money in perfecting this machine; and has done it solely with a view to scientific ends, as he neither manufactures nor sells them.

Another incubator was also exhibited, but as it was not in operation, does not call for special notice.

Of coops there was quite a variety, some good, some poor. An exhibition coop, exhibited by S. J. McIntosh of Worcester, Mass., was the most complete we have ever seen. A drawer under the floor—composed of round rods set close together—received all the droppings, and could be taken out and cleansed without disturbing the fowls at all. The coop is open at top and two sides, thus giving the most perfect light on the fowls. When not

in use it can be folded up; and ten of them may be packed in the space occupied by one.

Of feeding and drinking-fountains only one was exhibited, to which was awarded first premium.

An artificial mother, for hovering young chickens elicited a great deal of interest. The apparatus consisted of a box about two feet wide and four feet long, about three-fifths of which was covered with glass, and the balance with tight wooden cover, under which was an arrangement of wool and other covering, to shelter the young chicks and protect them from the cold. A warming attachment was added for use in cold weather. It shut up tight at night, thus completely protecting the chicks from cats, rats, weasels, or other vermin. It is a great improvement on the English designs which have been in use for the last thirty or fifty years.

Having illustrated many of the premium fowls in our last, we shall not notice individual coops this week. The show of French fowls was good, better than we have ever before seen. The Philadelphia stock of Light Brahmas were again ahead of all competitors. Of Dark Brahmas there were a great many coops shown, containing but very few first class birds. Of Dorkings the show made up in *quantity* what it lacked in quality. But very few even good birds were shown.

Polish and Hamburg classes were well represented, some very beautiful birds being shown in each.

Black Spanish were poor—not more than two or three coops deserving even a passing notice.

Cochins were superb. We never saw so fine a show before.

Geese were indifferent; ducks good; peafowl and Guinea fowl, good; pigeons were poor, and not in very large numbers. A fine collection of pheasants from Central Park was shown, and attracted a great deal of attention.

As a whole, the collection was a fine one, although a great many very inferior birds were shown.—*Rural New Yorker.*

The venerable B. P. Johnson, so well known throughout the country, as Corresponding Secretary of the N. York State Agricultural Society, died recently at Albany. Mr. Johnson enjoyed and deserved the respect of all who knew him, and lived to a good old age.

Mulching Berry Bushes, Strawberry Vines and Fruit Trees.

At the Oneida Community, last season, the experiment of mulching raspberry bushes was tried upon rows of the Franconia and Philadelphia, standing near each other, while other rows of each of these varieties near by were not mulched. The result of the mulching upon the Franconias was to make them produce nearly double the amount of fruit produced by those not mulched, the latter being so badly scorched that their leaves crumpled in the sun. The effect of the mulching upon the Philadelphias, although less marked, was much the same, the quantity and size of the berries being increased. Half-decayed buckwheat straw was used in making the experiment. Some buckwheat came up, but the lawn hook speedily put it out of the way.

Having prepared the ground by cultivating properly in the spring, the first of June is early enough for the mulching, the soil by that time being sufficiently warm, and the new canes having obtained sufficient growth. —Coarse grass, or the brakes and flags of swampy lands, will serve instead of straw, when that material can not be had. Mulching may also be applied to strawberry vines and fruit trees, with the same good effects. It is an excellent preventive of drought, retaining moisture and answering, to a great extent, the purpose of watering. In the case of fruit trees, it has the same good effects as mellow culture.

The best manner of applying it is something as follows: For raspberries, it should be spread evenly over the entire surface of the ground, and should be allowed to lie undisturbed. For strawberries, it should be applied between the rows, covering this space completely, and when the frost comes, the covering should be made to include the plants also. In the spring, this covering should be removed from the plants and confined, as before, to the space between the rows. For fruit trees, the entire space around the trees included within the circumference of the branches and a little beyond, should be covered over. The mulching of a larger surface would be better yet. As to the quantity and depth of the material applied, there is need of caution, as too much will be likely to produce diseases, in the shape of fungoid growth, etc. If the mulch is of a compact nature, two inches depth will be sufficient, and three should be the extreme limit.

It has been proven by the experience of well known fruit-growers, that trees newly set, if properly mulched, at the time of setting, seldom fail to live and thrive, *without watering*, while of those not mulched, the greater portion are invariably lost.

Among the benefits secured by this plan of treatment, as stated by different fruit-growers, are a uniform temperature, continual moisture, the prevention of cracking of fruit, (the fruit being free from unsightly spots, undecayed, and covered with bloom,) and a great increase in yield. Its trial, if properly made, in the opinion of those who have tried it, can hardly fail to produce good results.—*Utica Herald*.

Our Future Jersey Cows for Beauty and Utility.

The Jersey is naturally the most beautiful of all cows, and at present deserving our greatest attention as a dairy producing animal. Their rich milk and highly flavored butter, winter or summer, gives them superiority over all others. Her colors, orange-fawn, pale fawn, squirrel-gray, and sometimes a mixture of the three on the same animal, makes her a fit picture for the farm, the lawn or the field; her great docility renders her agreeable everywhere, and a pet to the lady and children of any domain—thereby also making her the true family cow.

To breed the pure Jersey with all her beauty and utility, deserves more than little care, and should be trusted but to men of very accurate judgment. All coarse animals must be cast aside, for every true observer knows that fineness and coarseness are incompatible; therefore when wishing to give fineness of type to your herd, you will dispense with the service of a coarse bull. This must be absolutely the case. A cow not being exactly what you desire, in type of fineness, if possessed of great milking qualities, may be used to some extent, and with a proper bull may produce some valuable offspring. Extremities of all animals denote the degree of breeding, and all with unsightly features must be sold or dispensed with.

Some will say that by breeding so fine we will defeat the object of dairy purpose. Not so; large, well developed carcasses can be obtained, and yet the finest of type preserved—but of course not without trouble.

A very important point in starting upon your new creation is, to use nothing but pedi-

greed animals, and these of the best strain of blood, as impurities, like bad seed, will show themselves, and mar the subject of your labors.

The true points, in my opinion, we should aim at for the perfection of the Jersey cow, should then be—

Head fine, long, narrow between the eyes, dished and fleshless; horns short, fine, amber color at base, pointed with black, and crumpled; eyes black, large, not too prominent, placid, with a well developed orbit; tongue black; ears thin, small, and orange within; cheek thin; neck light or lean, with a slight fall from the shoulders; throat clean; dewlap scanty; breast not too broad; shoulders slanting from front, back rather thin and light; back perfectly level from shoulders to drop of tail; girth rather round, and forming a waist-like appearance when viewed from the side; ribs standing well out and deep, giving the animal a great capacity for food. All flat-sided animals diminishing width of loins and pelvis, are objectionable. Flank very deep; loins wide; pelvis wide, giving the cow a square walk and plenty of room to accommodate a large udder; rump long and pretty level—length increasing also capacity for bag; the tail should be long and whip-like; the thighs must be broad and thin—(a fleshy one, belonging to beefy cattle, leaving no room for the development of udder. The escutcheon must be broad and running all the way up to the vulva, the hair thereon being fine and velvety to the feel; the udder should run well under the belly and well up behind, and ought to be much shrunk after milking; the teats must be of full size, not funnel-shape, and standing well apart from each other—must never point to the belly or sideways, but to the ground, where the pail stands for milk; milk-veins well developed, running in a zig-zag course, and entering the belly by a large cavity. The fore-arm must not be too large or muscular, the hock flat and wide, the joints well defined, the canon bones small and rather round in the fore-legs and flat in the hind ones, and hoofs small, black, yellow or striped. Shin thin and yellow and mellow. The general health of the animal must be good, and should show vigor.

For our success the bull must approach the shape of the cow as much as possible, be of kind disposition, and vigorous.

By following the above suggestions, I believe that we would before long become pos-

sessors of superior Jersey cows—establishing for her a just superiority over all other breeds for dairy or family use.—*Cor. Practical Far.*

Sam Bowles' Mule.

"My mule—did you ever ride a mule?—There is no other experience that exactly fits one for this. As far as a mule's brains go, he is pretty sensible—and so obstinate! But it takes a long time to beat a new idea into his head; and, when it dawns upon him, the effect is so overpowering that he just stops in amazed bewilderment, and won't move on again until he is relieved of the foreign consciousness and gets back to his own original possession. The whole process is startlingly human; it inspires you with faith in the idea of transmigration of souls. I know so many people who must have been mules once, or will be—else there is no virtue in the fitness of things! But my mule belonged to the best of the race; he was prudent, he never went in any doubtful places until somebody else had gone before and proved the way; he was very patient, he would always stop for me to get off or to get on; he was very tough, my spurs never seemed to annoy him one atom, and my riding him didn't wear the skin off his back, not a bit. But after we grew acquainted, and he came to appreciate the more delicate shades of my character, we got on charmingly together for the first half of the day. In the afternoon, when he grew lazy and tired, and I nervous, we often had serious discussions, sometimes with sticks; but he generally got the best of the argument."

KEEP OF COWS.—A correspondent of the *Germanoren Telegraph* wishes that he could make the truth vivid to every keeper of cows, that the care of them is something that requires knowledge and painstaking in details. Cows must not be neglected or deprived of sufficient food. Good shelter and abundance of food they must have if we would make them profitable. Evenness of local temperature is a necessity. If the weather is cold or wet without doors, they should be made warm and dry within the stable. If the sun shines too hot, they should have the privilege of shade. When a cow becomes uncomfortable, the flow of her milk is restrained. A cow will return to you just in proportion as you confer care upon her.

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Planting Corn in Drills.

Our readers are aware that we have occasionally urged the superiority of the practice of planting corn either in drills or in small hills, thick in the row, where the highest amount of product is the object. The average increase, in a number of observations and experiments in drill or thick hill planting, has been about 25 per cent. John Johnston says that this increase much more than overpays the slight additional cost of labor in hoeing, and nearly doubles the corn-fodder. We find our views endorsed in a recent article in the *Clyde Times*, with the signature of "W." which we recognize as that of Joseph Watson, well known as an intelligent and successful farmer. —He states that he has used Emery's corn planter for twenty years, and finds it a labor-saving implement, planting eight acres a day, and enabling him to put in his crop promptly and in season, even if there happens to be at the time a scarcity of farm laborers. He remarks that the object of planting rows both ways, is not equal in practice to the importance attached to it in theory, and then adds some reasons of the "row one-way system," in addition to those which we have formerly given, and which necessarily result from the use of a planter or drill. He states in substance, that while the ploughing of the sod is going on, which should be done with a strong team, a lighter team may be employed to harrow the freshly turned earth as fast as each "land" is completed, and corn planter follow immediately after. This obviates the necessity of waiting till the whole field is completed, for cross-working and planting in the old-fashioned way—when the soil, perhaps, has become dry, and many days lost by the delay. The rows thus planted by means of the drill will be either straight, or contain no short crooks; and hence the cultivator may be run close to the rows, and lessen the amount of hand-hoeing. Another advantage is, the hoes may follow immediately after the cultivator while the earth is fresh and mellow; and any stalks accidentally covered are immediately relieved and set up, without leaving them partly prostrated several days, as in the old practice, until the cross cultivation is commenced. He further adds that he prefers the drill with its one horse, to any five men planting by hand and hoe, even after the whole field has been marked both ways; and that none of his neighbors raise greater crops of corn or at so little expense per bushel.—*Register of Rural Affairs.*

Purity in Breeding.

Your correspondent, "H.," in the *Rural* of March 13th, has touched upon a nice point in breeding animals, which cannot fail to interest and bring out arguments and the experience of many. I hope the opportunity will not be lost. An excellent article on this subject may be found in the *Practical Farmer*, Pa., April, 1868, page 52.

As to the subject matter I shall briefly say that while I have been somewhat skeptical whether the same will hold true to the feathered tribes, as in hogs, that "when a pure bred animal of any breed has been pregnant by an animal of a different breed, such pregnant animal is a cross ever after, the purity of her blood being lost in consequence of her connection with the foreign animal, and is ever after incapable of producing a pure product of any breed," yet I have no good reason to disbelieve it from the experience of others.

At all events, I never allow different breeds of fowls to associate together at any time. The old maxim is the best, "a place for every fowl, and every fowl in its place." As for the one gobbler favoring and satisfying a whole neighborhood, by a single visit to each family, *may* be so; but the same will not answer for hens. In one transaction I lost faith in the limits of impregnation. My theory is, the cocks and hens must associate together constantly to insure the hatching of eggs.

In June, 1866, I bought the first Brahmas I ever owned—a pair of pullets. Mr. M. wrote me accompanying the fowls as follows: "The eggs you will get from these hens for the next four weeks will produce pure chicks if kept away from cocks of other breeds. They have had plenty of male company."

The fowls were received June 18th, and on the 18th, only the fourth day from their former companions, I let a neighbor have three eggs from them for hatching. These were set with twelve Spanish eggs, making a nest of fifteen. The result was, every egg in the nest hatched except the three Brahmas.

The next half-dozen of their eggs I set, making the balance of the setting with Black Spanish with the same result as before. This was conclusive to my mind. Though still somewhat skeptical as to whether "when a pure bred fowl has been pregnant to a fowl of a different breed, such fowl is ever after incapable of producing a pure product," I have never allowed different breeds to associate together.—*Cor. Rural New Yorker.*

SUNDAY READING.

We must believe that God's Providence over States and kingdoms, times and seasons, is all for the best; that the revolutions of States and changes of empire, the rise and fall of monarchies, persecutions, wars, famines, and plagues, are all permitted and conducted by God's Providence to the general good of mankind in this state of trial. This is a noble magnificence of thought, a true religious greatness of mind, to be thus affected with God's general Providence, admiring and magnifying His wisdom in all things; never murmuring at the course of the world, or the state of things, but looking upon all around, at heaven and earth, as a pleased spectator, and adoring that invisible hand, which gives laws to all motions, and overrules all events to ends, suitable to the highest wisdom and goodness.

It is observable that neither the Apostles, nor all the Evangelists, preached so much of hell, as Jesus Christ did. He hath seven particular texts of hell, and the torments of the damned, which the Apostles never had. Chrysostom notes, that in all the Old Testament, the word damnation was never used, but is used thirteen times in the New. Therefore it is clear to every eye that the Gospel is more backed with terror, and the doctrines of hell and damnation, than ever the Law was: the preaching of the Law hath only *anathema*; but the Gospel hath *maranatha* also.

Mercy, sweet Jesu, mercy! How often hast Thou called us, and we resisted Thy voice? How often hast Thou spread forth Thy wings, and we neglected Thy charity? Pardon, O dear Redeemer, our strange ingratitude, and leave us not desolate to be ruined by our follies. Deliver us from the dismal state of those who so long inure themselves to sin, that at last they have no sense of sinning, but one enormity is the punishment of another. O save us from ourselves, that our folly may not be our ruin.

Do not please yourself with thinking how piously you would act, and submit to God, in a plague, a famine, a persecution; but be intent upon the perfection of the present day, and be assured, that the best way of shewing a true zeal is to make little things the occasions of great piety.

Bended knees, whilst you are clothed with pride; heavenly petitions, whilst you are hoarding up treasures upon earth; holy devotions, while you live in the follies of the world; prayers of meekness and charity, while your heart is the seat of spite and resentment; hours of prayer, while you give up days and years to idle diversions, impertinent visits, and foolish pleasures, are as absurd and unacceptable service to God, as forms of thanksgiving from a person who lives in repining and in discontent.

St. Basil compares those who preach only by their words, to painters who, though they may be ugly themselves, yet fail not to make and paint beautiful pictures; so these, says he, paint humility in its true shape and color, but they themselves are filled with vanity and pride; they make beautiful pictures of patience, but impatience and anger transport them every moment; lastly, they make beautiful pictures of modesty, recollection, and silence, but they are continually dissipated, and distracted by a thousand frivolous objects.

When theft, or oppression, or perjury, or sacrilege, have laid the foundation and reared the house, then the curse of God creepeth in between the walls and ceilings, and lurketh close between the stones and timber; and, as a fretting moth or canker, insensibly knoweth asunder the pins and joints of the building, till it have unframed it, and resolved it into a ruinous heap; from which mischief there is no remedy, no preservation from it but one, and that is free and speedy *restitution*.

From the beginning of fears Christ dates the beginning of apostacy. When troubles and dangers come to an height, then fears begin to work at a height too; and then is the critical hour. Fears are high, and faith is low; temptations strong, and resistance weak. Satan knocks at the door, and fear opens it, and yields up the soul to him.

Men go far to observe the summits of mountains, the waters of the sea, the beginnings of the courses of rivers, the immensity of the ocean, but they neglect themselves.

There is no grace that the spirit of self can counterfeit with more success, than a religious zeal.

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GABRIEL D. CLARK,
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Thoroughbred Jerseys (Alderneys.)

12 BULLS, from 1 to 7 years old.

(Among these are Bull "Gen. Sheridan"—took the 1st prize at the N. E. Fair in Sept., 1867; "Gen. Scott"—took the 1st prize at the N. E. Fair in Sept., 1868; "Joe Hooker" and "Kilpatrick"—both took 2d prize in their class at the N. E. Fair in Sept., 1868.)

20 HEIFERS and COWS from 1 to 5 years old.

(Among these are several prize animals.)

Thoroughbred Ayrshires.

10 BULLS, from 1 to 3 years old.

25 HEIFERS and COWS, 1 to 7 years old.

My Ayrshires are from the best milking strains of pure blood to be found in the country.

Half Alderneys and Half Ayrshires.

40 HEIFERS and COWS, from one to six years old
Among this superior cross, for cows, are many that made last season 10 to 13 pounds superior butter per week.

Grade Jerseys (Alderneys.)

100 HEIFERS and COWS, 1 to 7 years old.

The excellent quality and large numbers of my herd, offers great inducements to parties (desirous of stocking their farms, or families desiring the best cow,) to select from.

RELIABLE PEDIGREES furnished for all thoroughbred stock sold. For terms, apply to
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\$20 A DAY to Male and Female

Agents to introduce the BUCKEYE \$20 SHUTTLE SEWING MACHINES. Stitch alike on both sides, and is the only LICENSED SHUTTLE MACHINE in the market sold for less than \$20. All others are infringements, and the seller and user are liable to prosecution and imprisonment. Full particulars free. Address W. A. HENDERSON & CO., Cleveland, Ohio. may-31

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For household, physicians' and toilet use. "Sheep Dip," to destroy tick, scab, &c. "Plant Protector," &c. Send for Descriptive Pamphlet. Manufactured solely by
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Inclose, with your address, one prepaid directed envelope and 25c. Ask for "The Mine of Wealth."
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Railway Pitching Apparatus; Complete Stacker; Pulley for reducing travel; Grapples for suspending Horse Forks. Agents wanted. Send for Circulars, to Paris Furnace Co.,
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SAPONACEOUS COMPOUNDS,

For Farmers, Gardeners and Stock Raisers, and for use in the Dwelling and Out Houses—comprising

Carbolic Disinfecting Soap, Cresylic Soft Soap, Cattle Plague Preventive, Foot Rot Ointment,

SHEEP DIP AND PLANT PROTECTOR,

No. 1, Laundry, Salt Rheum and Toilet Soaps.

From numerous RECOMMENDATIONS of Cresylic Compounds the following are selected as being specially valuable:

Five Points House of Industry, 155 Worth St.
New York, Nov. 15, 1867.

Messrs. BUCHAN & Co.—Gentlemen—Some months since we purchased a large building, which had been used as a tenement establishment for thirteen years, and was occupied by some ninety families. We tore away partitions, turning between three and four hundred rooms into less than one hundred. We found the walls and floors perfectly infested with vermin. We used freely, in cleansing, the CRESYLIC SOAPS manufactured by your firm, and with the very best results, as the bugs etc., have entirely disappeared. We propose to continue its use in cleaning our dormitories, hoping then to keep clear of a plague so common to all housekeepers in cities.

E. B. HALLIDAY, Supt.

BROOKLYN, November, 1867.

M. C. EDIT, Agent for Sale of JAMES BUCHAN & Co's, Cresylic Soaps, &c.—Dear Sir—We have had the Cresylic Soap used in the Raymond Street Jail and County Court House; and in washing and cleansing prisoners' clothing, cells, etc.; and we are so much pleased with its descaling, disinfecting and insect-destroying effects, that we not only continue its use in above places, but recommend that it should be generally used for those purposes.

JOHN L. RYDER,
STEPHEN CLARK,
D. S. VOORHIES,

Committee on Jails of Supervisors of Kings County, N.Y.

CORPUS CHRISTI, TEXAS, March 15, 1868.

Messrs. JAS. BUCHAN & Co.—Gentlemen: Your Sheep Dip is wonderful in its effects. I have dipped 2150 head with nine month's fleeces on their backs. It is now three weeks since, and no scratching as yet. Your Dip is far superior to tobacco, not so disagreeable or unpleasant, much less trouble and more permanent.

I have used it on horses when diseased with a species of mange or itch, and it has the same good effect as on sheep.

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The value of these compounds, for which Letters-Patent have been granted, is fully established as Disinfectants, Antiseptics, and Destroyers of Insect and Fungus Life wherever found.

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BELTON, BELL CO., TEXAS, July 10, 1868.

Messrs. BUCHAN & Co.—Gentlemen—The compounds of the cresylic acid sent me some months since, have been thoroughly tested by myself and neighboring flockmasters. All agree with myself that, as disinfectants and remedies to cure scab, kill screwworm and prevent its return, healing old gangrenous sores and wounds, killing and driving away flies, these preparations are without a rival, and should be within reach of every stock raiser in Texas.

Respectfully,
H. J. CHAMBERLIN,
President Texas Wool Growers Association.

SOUTH KORTRIGHT, N. Y., Jan. 31, 1868.

Messrs. JAS. BUCHAN & Co.—Dear Sirs—I have used your Cresylic Compound, or Sheep Dip, on some calves, and find it sure death to lice. Can confidently recommend it for destroying vermin. I think it gives the hair a glossy appearance, and shall use it on all my stock.

S. R.

American Agriculturist, April 8, 1868.

Lice on Cattle and Sheep.—The Spring is the season when most annoyance is caused by these parasites. We have so many letters, asking for and recommending cures that we are induced again to allude to that wonderfully effective destroyer of such vermin, Carbolic Acid. This is used in the form of soaps, which may be easily applied in water, making a moderately strong suds. Cresylic Acid is a cognate substance, almost always associated with carbolic acid, and under the trade-name of Cresylic Soap an excellent article is advertised and furnished. We have employed this soap to rid our shelves of ants, our cupboards of cockroaches, poultry of lice, dogs and cats of fleas, and not having any occasion to use it upon our horses or neat stock, have supplied acquaintances whose stables were infested. We have even prescribed a bath of Cresylic Soap and water for a newly arrived immigrant, and in every case of its application have had the satisfaction of learning of its efficacy. Farewell to mercurial ointment, that efficient but very dangerous article in careless hands. So long as we can obtain carbolic compounds we banish it.

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Saddle and Carriage **HORSES**: Merino and Leicester **SHEEP**; Chester County **SWINE**; White Faced **BLACK SPANISH**; White and Grey **DORKINGS**; White and Dominique **LEGHORNS**; 12 varieties **GAMES**; 6 varieties **BANTAMS**; **SHANGHAI** and **DRUMHAMS** (pea comb); Silver, Golden and Black **POLANDS**; Bronze and White **TURKEYS**; African and Bremen **GEES**; Rouen, Aylesbury, Black, Cayuga, Musk, Black, White Poland and Wood **DUCKS**; Guinea and Pea **FOWLS**; 20 varieties **PIGEONS**.

SCOTCH COLLEY or **SHEPHERD PUPS**, all ages, from our imported stock which has taken first prizes at all New England, Vermont State, New York State and many other State and County Fairs. Also, **ENGLISH COACH DOGS**, all ages, from imported stock.

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A Herd of **Devon Cattle**, from 20 to 30—thoroughbred—also a number of **Valuable Horses**, and **Colts**, among which are several fine road horses and two Superior Brood Mares,

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Easton, Md.

VINEGAR from Cider, Wine, Molasses or Sorghum, in 10 hours, without using drugs. For terms, circulars, &c., address **F. I. SAGE, Vinegar Maker, Cromwell, Conn.**
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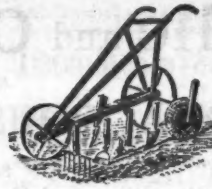
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Hand machine for all kinds of Garden Cultivation.—Warranted to do the work of 4 men. Send for Circulars. **Blymyer, Norton & Co., Cincinnati, O.** **Blymyer, Day & Co., Mansfield, O.** **Blymyer, Fearing & Co., Chicago, Ill.** 1t

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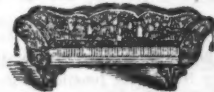
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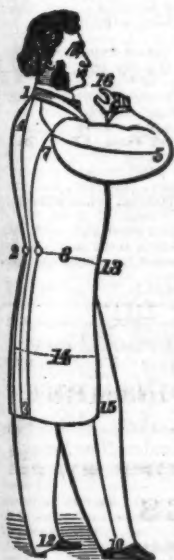
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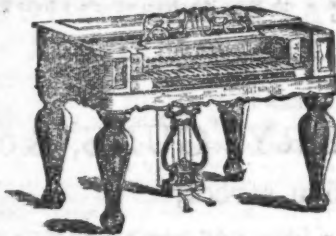
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Have a large and carefully selected stock of pure Drugs and Chemicals—also a large assortment of TRUSSES, Abdominal Supporters, Shoulder Braces, Eng. Bougies and Catheters, Suspensory Bandages, Gum Elastic and Glass Pessaries, Glass, Metal and Rubber Rectum and Vaginal Syringes, and Hyperdermic Syringes—to which they invite the attention of Physicians and the afflicted. Also the following

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Direct from the SPRINGS, to which they are constantly adding other Waters of any merit, as they are introduced, and consumers can rely upon their freshness and purity:

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Washington, (Chalybeate,)	Coyner's Sulphur,
Baron Sulphur,	Meltzer,
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This Bone Dust is not so fine as our Bone Flour, but sufficiently fine to prove active on the first crop. It is prepared in New Orleans for our sales.

We have every cargo subjected to careful chemical analysis, and thus avail of the proper means of protection for ourselves and our patrons.

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FLOUR OF RAW BONE.

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Agricultural Implements and Machinery,
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WESTINGHOUSE THRESHERS and CLEANERS,

Pelton's Horse Powers of the best make,

Bickford & Huffman's GRAIN & GUANO DRILLS,
THE BEST IN THE COUNTRY,


Novelty Horse Rakes on Wheels, very good,


The well known VAN WICKLE WHEAT FANS,

Also, MONTGOMERY'S ROCKAWAY FANS,

HARROWS, PLOWS, CULTIVATORS, &c., &c.

Fresh and Genuine FIELD and GARDEN SEEDS.
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THE BEST BERRY FOR AMATEUR CULTURE,

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"THE AMERICAN FARMER" for 1869.

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For \$3.00, 12 plants (by mail, postage paid,) and either of the following for 1869;

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"National Agriculturist," Pittsburg, Pa.
"The Ruralist," Cincinnati, Ohio.
"The Northern Farmer," Fond du Lac, Wis.
"American Etomologist," St. Louis, Mo.

"Rural Gentleman," Baltimore, Md.
"Western Ruralist," Louisville, Ky.
"Farm and Garden," Clinton, S. C.
or any \$1 Magazine, or Newspaper, published in the United States.

For \$3.50, 12 plants, (as above) and either of the following for 1869:

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"Rural American," New Brunswick, N. J.
"The Northwestern Farmer," Indianapolis, Ind.
"The American Farmer's Magazine," Cincinnati, Ohio.
"The Farmer's Gazette," Richmond, Va,

"Maryland Farmer," Baltimore, Md.
"Southern Ruralist," Tangipahoa, La.
"Practical Farmer," Philadelphia.
or any \$1.50 Magazine, or Newspaper, published in the United States.

For \$4.00, 12 plants (as above) and either of the following for 1869:

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"Gardener's Monthly," Philadelphia.
"Farmers Chronicle," Columbus, Ohio.
"Ohio Farmer," Cleveland, Ohio.
"Prairie Farmer," Chicago, Illinois.
"Western Farmer," Madison, Wis.
"Farmer's Advertiser," St. Louis, Mo.
"Coleman's Rural World," St. Louis, Mo.
"Southern Planter and Farmer," Richmond, Va.

"Southern Farmer," Memphis, Tenn.
"Southern Cultivator," Athens, Georgia.
"Southern Horticulturist," Canton, Miss.
"The Carolina Farmer," Wilmington, N. C.
"New York Weekly Tribune," New York City.
"New York Weekly Times," New York City.
or any \$2.00 Magazine, or Newspaper, published in the United States.

For \$4.50, 12 plants (as above) and either of the following for 1869:

"Record and Farmer," Brattleboro, Vermont.
"New England Farmer," Boston, Mass.
"The Massachusetts Ploughman," Boston, Mass.
"Horticulturist," New York City.
"Cultivator and Country Gentleman," Albany, New York.
"Western Rural," Chicago, Ill.
"Rural West," Quincy, Ill.

"Iowa Homestead," Des Moines, Iowa.
"Advance," Chicago, Ill.
"The Independent," N. Y. City.
"The Methodist," "
"The Church Union," "
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For \$5.00, 12 plants (as above) and either of the following for 1869:

"Journal of Horticulture and Floral Magazine," Boston, Mass.
"Boston Cultivator," Boston, Mass.
"Rural New Yorker," Rochester, N. Y.
"Farmer's Journal," Lexington, Ky.

"Congregationalist," Boston, Mass.
"Semi-weekly Times," N. Y. City.
or any \$3.00 Magazine, or Newspaper, published in the United States.

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ORCHILLA GUANO,

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A True Bird Guano.

Rich in Phosphates and Alkaline Salts.

Substitute for Ground Raw Bones.

And when combined with one-fourth of Peruvian Guano gives results greater than the entire application of that costly Guano.

From Orchilla Island, in the Caribbean Sea, belonging to Venezuela. Lat. 11° 50' N., Lon. 66° 14' W.

PRICE \$30 PER TON.

OFFICE OF THE STATE INSPECTOR OF GUANO,
Baltimore, Jan. 6, 1869.

Result of analysis of a sample of ORCHILLA GUANO, representing cargo of brig "Harold," imported into the United States by B. M. Rhodes & Co.

Moisture (det. at 100° C).....	10.062
Organic Matter.....	8.594
Phosphoric Acid.....	24.010

Which is equal to 52.416 per cent. of Bone Phosphate of Lime.

Rendered kiln dry, this cargo will contain 58.280 of Bone Phosphate of Lime.

JNO. G. DILLEHUNT, State Inspector.

PACKED IN BAGS AND BARRELS.

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FOR HAND AND HORSE POWER,**

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HAND AND POWER CORN SHELLERS
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PLANTATION GRIST MILLS, all sizes,

Made from Cologne and French Burr Stones, or Iron Cones.

CORN & COB CRUSHERS & CORN MEAL MILLS Combined.

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This *Reaper* took the Gold Medal at the Great Field Trial held at Auburn, N. Y., in July, 1866, as the best Self-Rake on the ground.

Monitor Mowers---3 Sizes.

This Mower we can recommend as the best in use.

**BUCKEYE AND CASES RIDING SULKY CORN, TOBACCO AND COTTON
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**Maryland Self-Discharging Hay and Grain Rakes,
THE BEST IN USE.**

SINCLAIR & CO'S IMPROVED CORN PLANTER,

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A rich compound of choice Peruvian Guano and Bone-Phosphate of Lime as found in the highest grades Phosphatic Guano, with some Alkaline Salts—beautifully prepared and put up in sacks of 11 to the ton of 2000 lbs.

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